

# **ALLEGATI**

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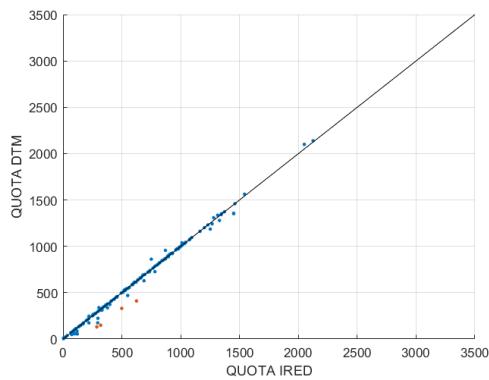
# Allegati

## Allegato 1 – Grafici di confronto fra I-RED e I<sup>2</sup>-RED

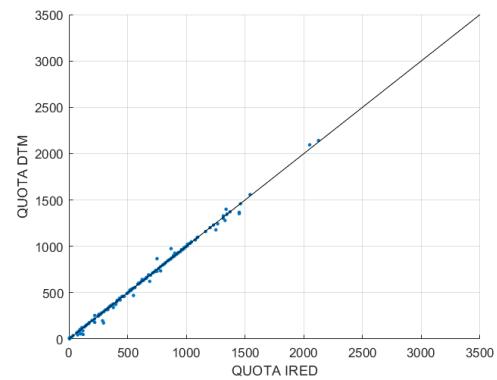
Nei grafici seguenti sono rappresentate in ascissa le quote delle stazioni pluviometriche presenti nel database I-RED, in ordinata le quote di EUDEM corrispondenti alle posizioni dei pluviometri. I grafici a sinistra si riferiscono alla situazione precedente all'aggiornamento del database, quelli a destra alla situazione successiva.

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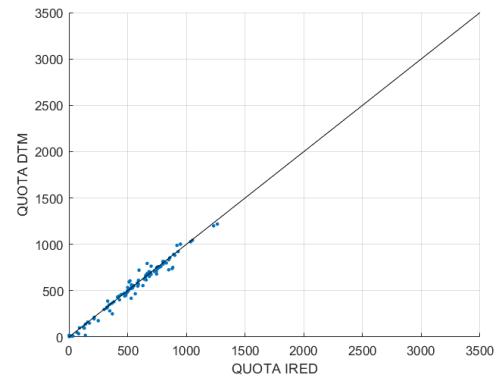
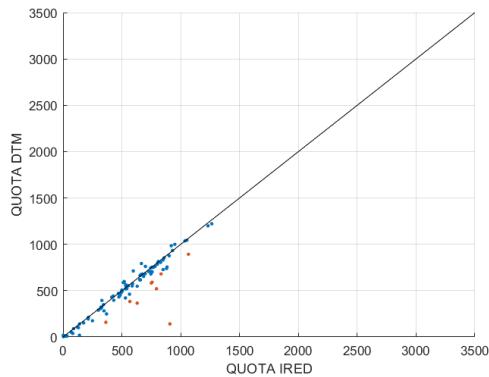
**Abruzzo**



**I<sup>2</sup>-RED**

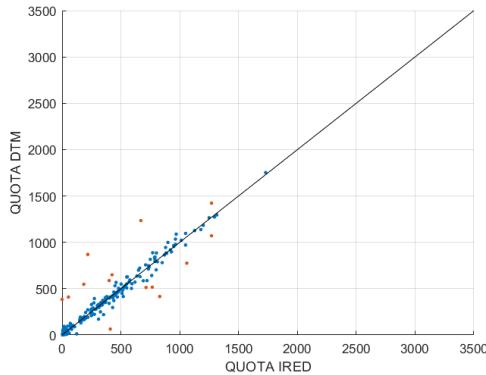


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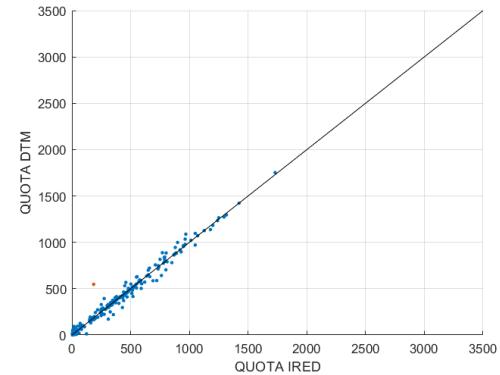


**I-RED**

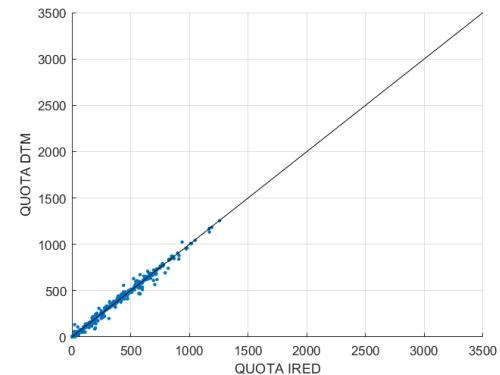
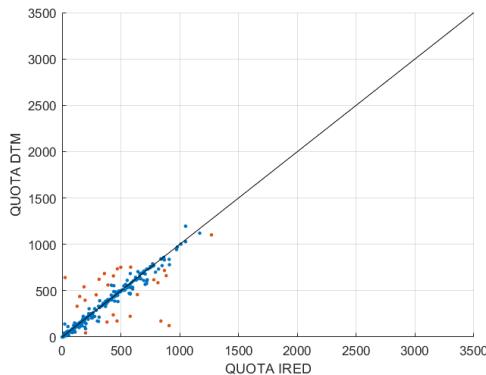
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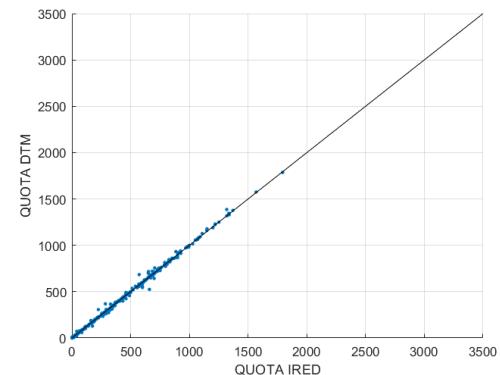
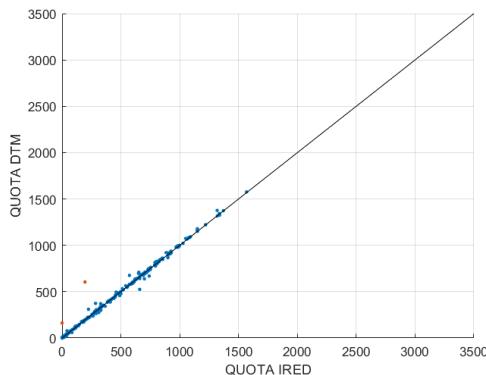
**I<sup>2</sup>-RED**



### Campania

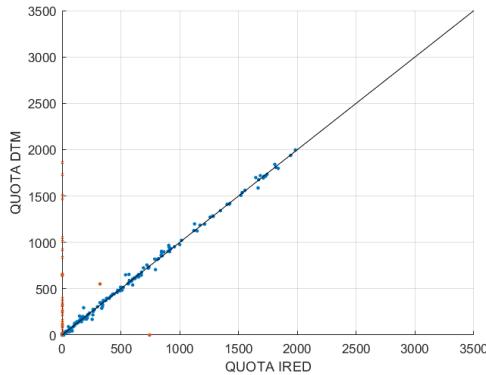


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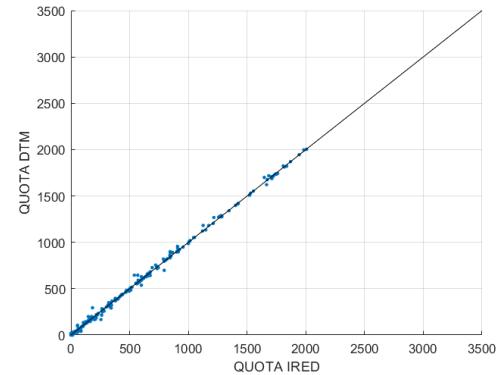


**I-RED**

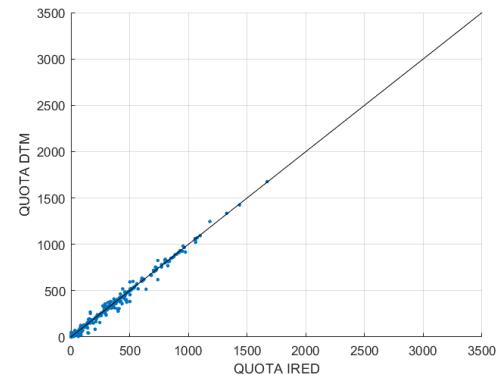
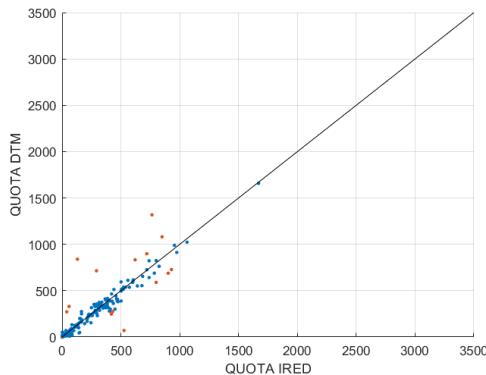
### Friuli Venezia Giulia



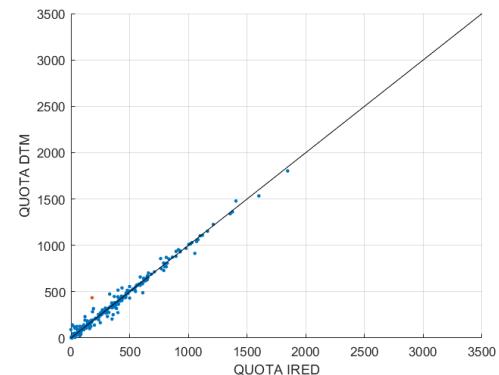
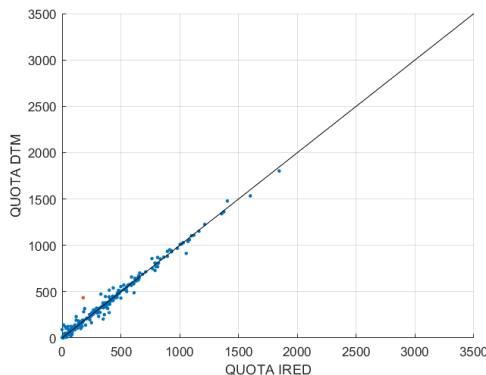
**I<sup>2</sup>-RED**



### Lazio



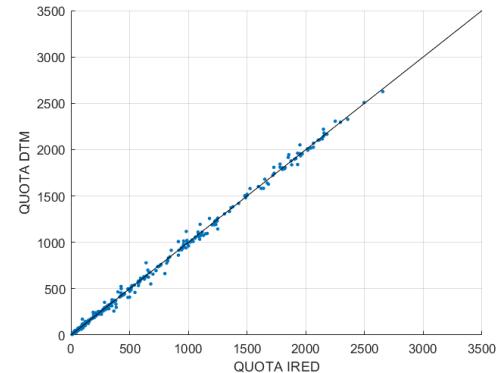
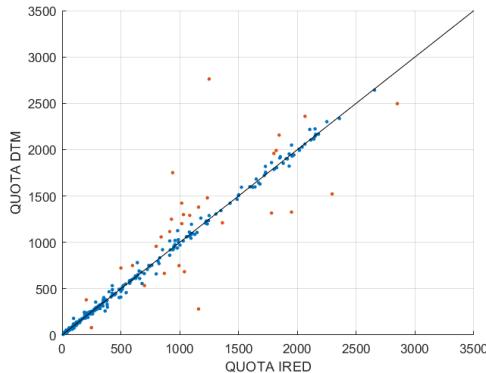
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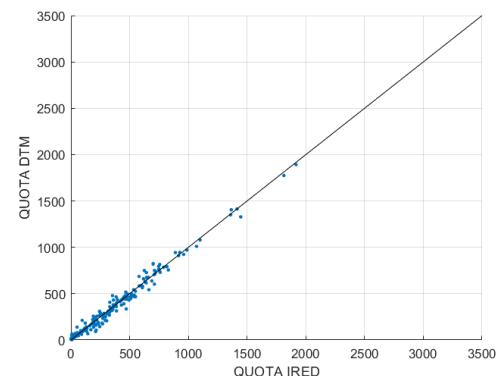
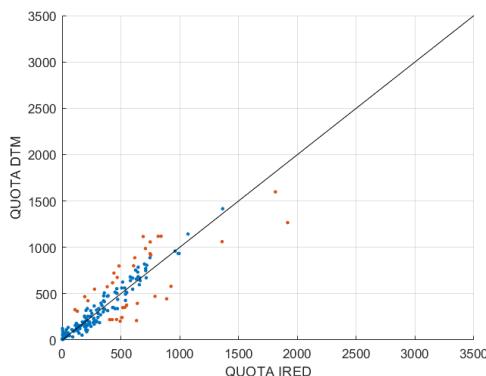
**I-RED**

**I<sup>2</sup>-RED**

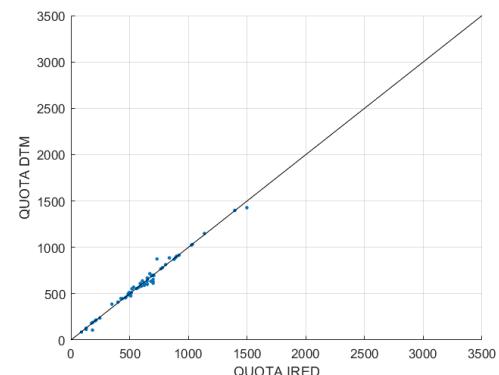
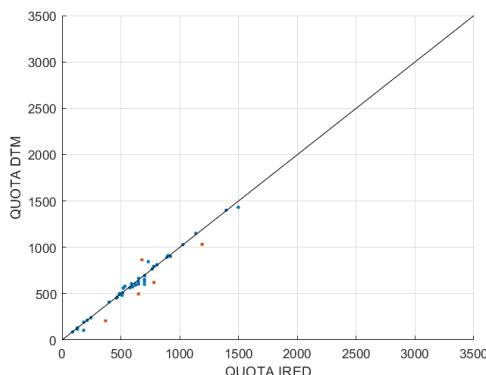
### Lombardia



### Marche



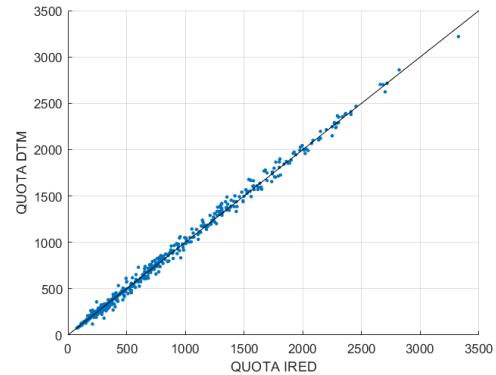
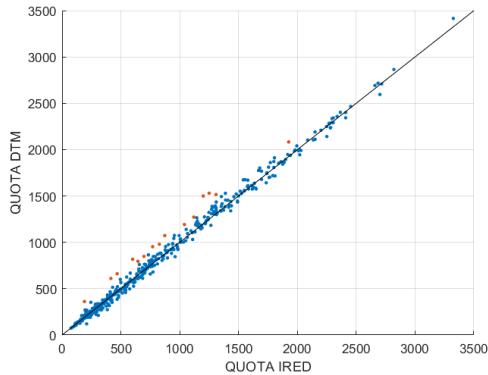
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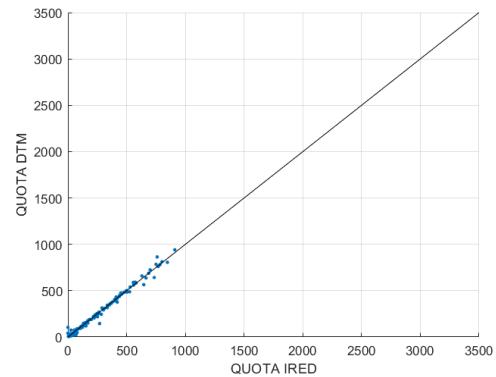
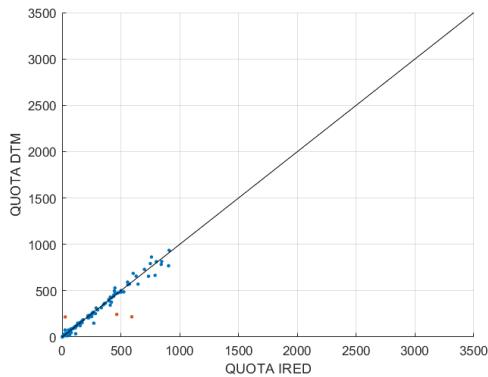
**I-RED**

**I<sup>2</sup>-RED**

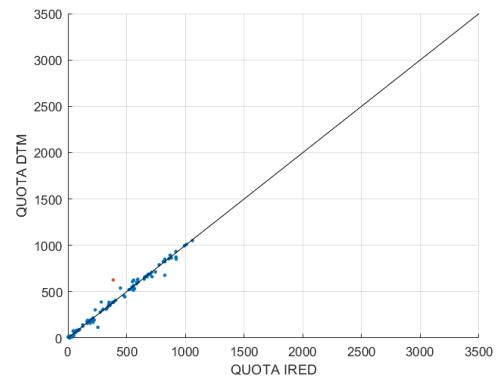
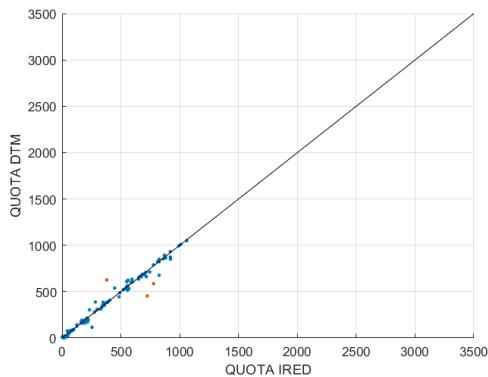
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### Puglia



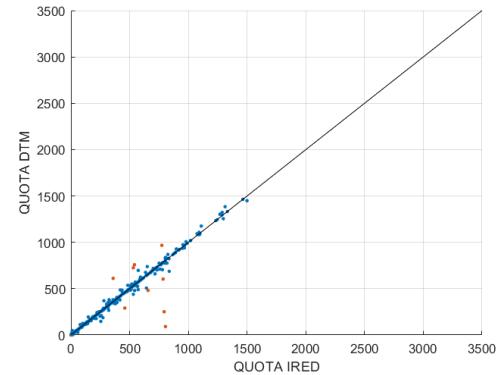
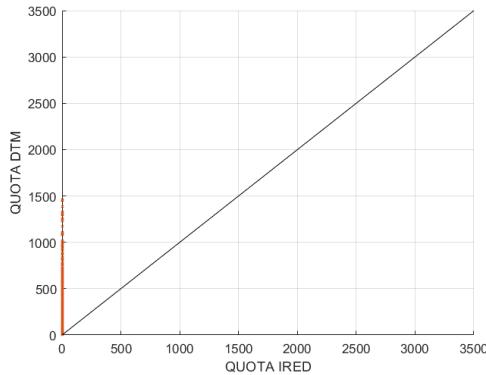
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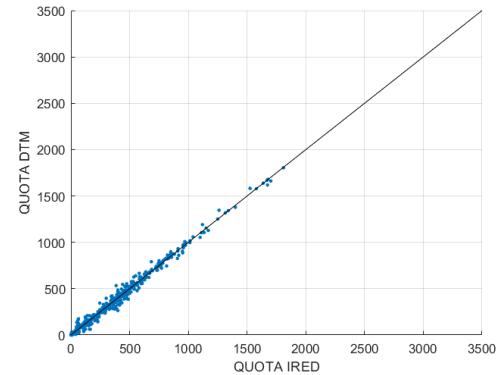
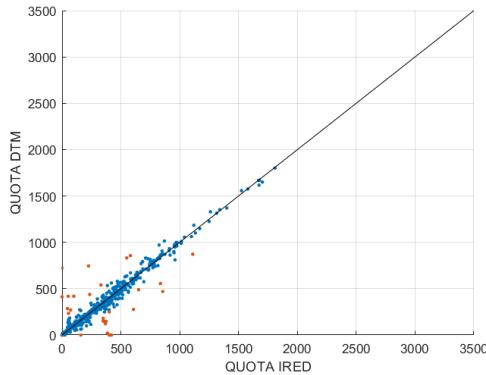
**I-RED**

**I<sup>2</sup>-RED**

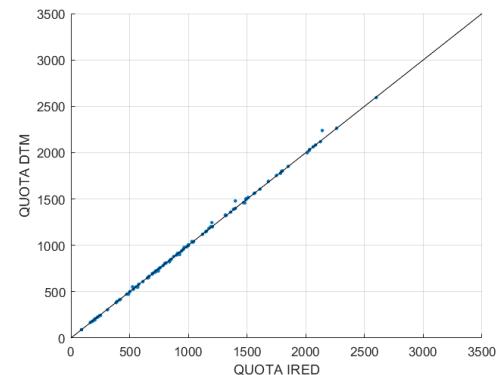
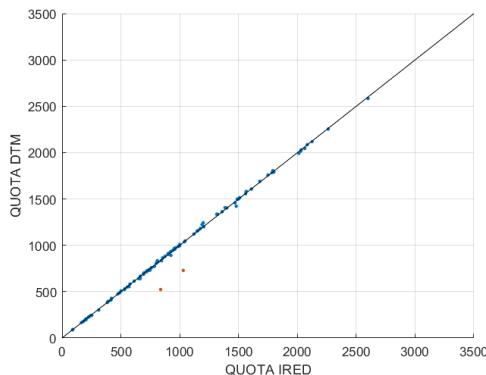
### Sicilia



### Toscana



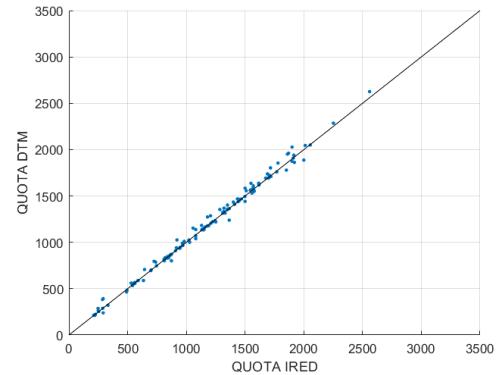
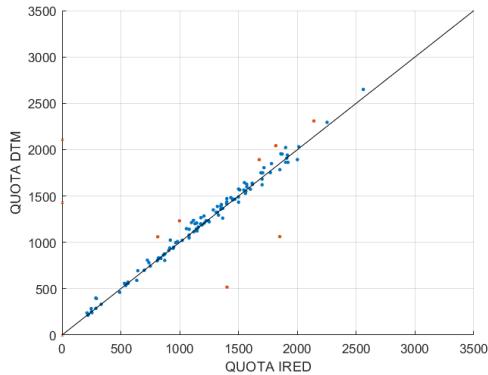
### Provincia autonoma di Trento



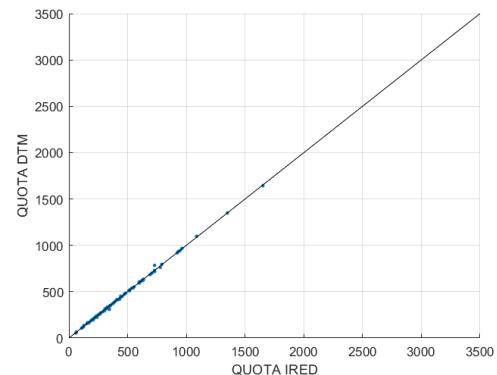
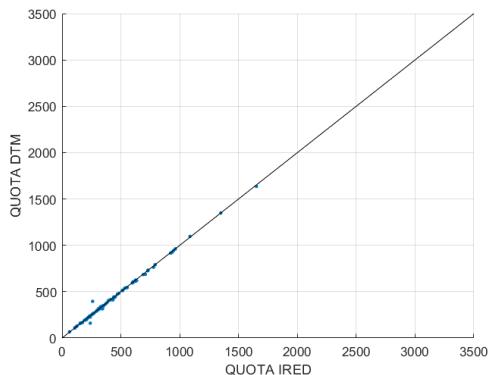
**I-RED**

**I<sup>2</sup>-RED**

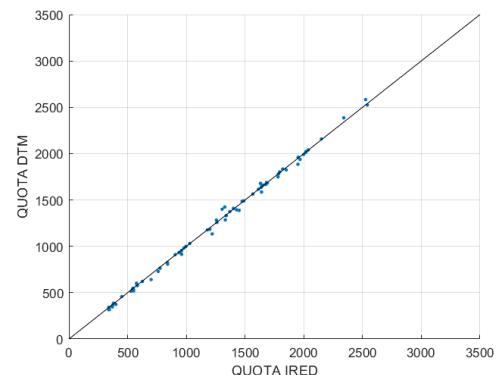
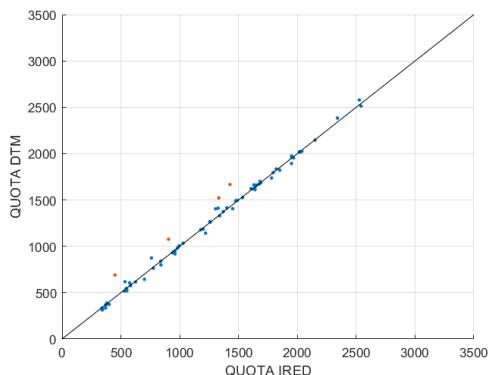
### **Provincia autonoma di Bolzano**

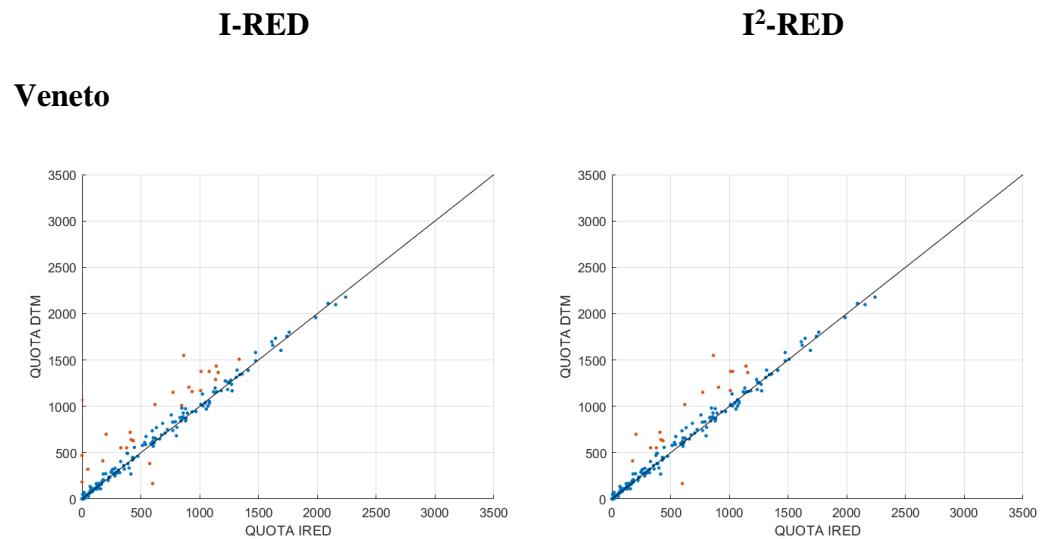


### **Umbria**



### **Valle d'Aosta**

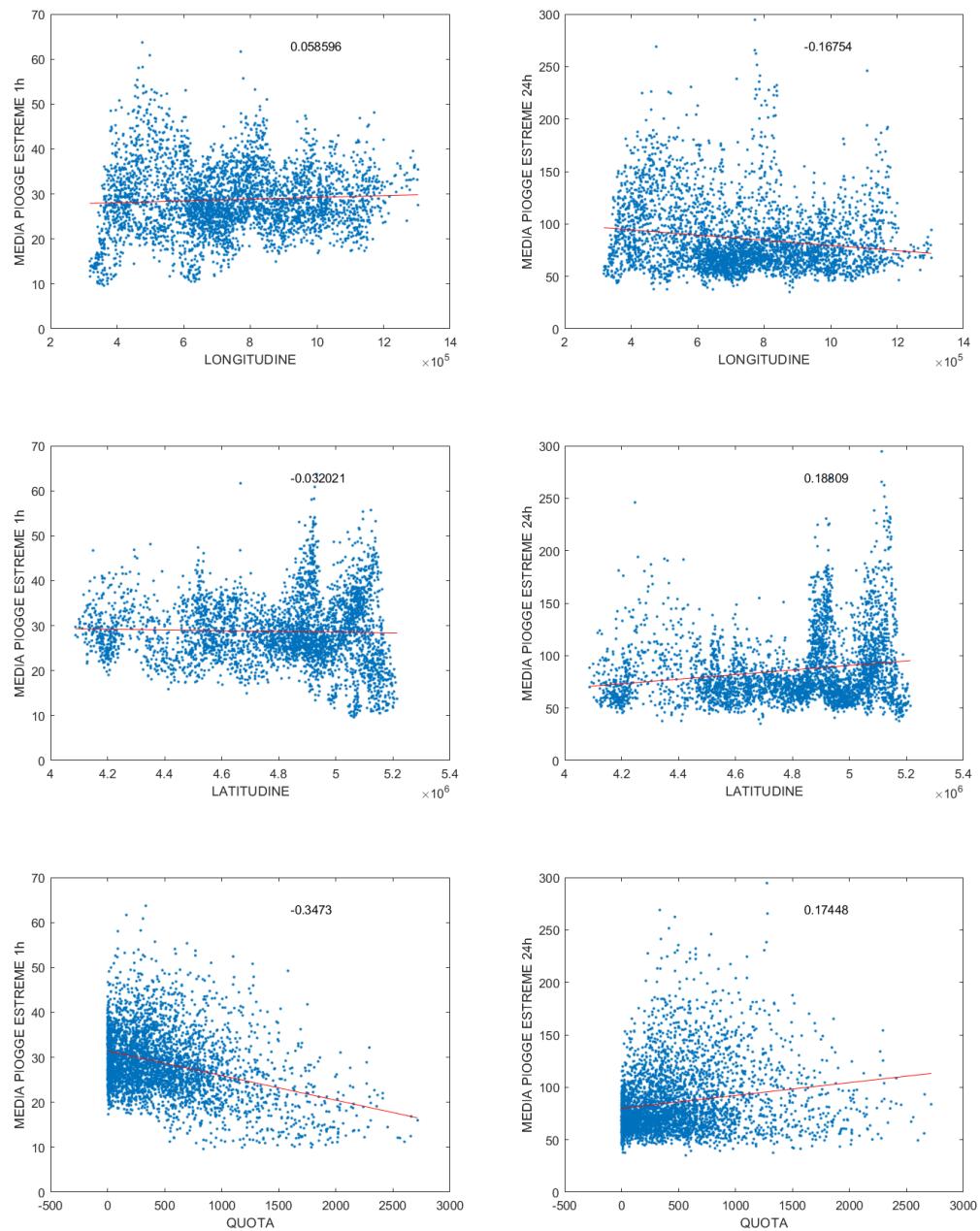


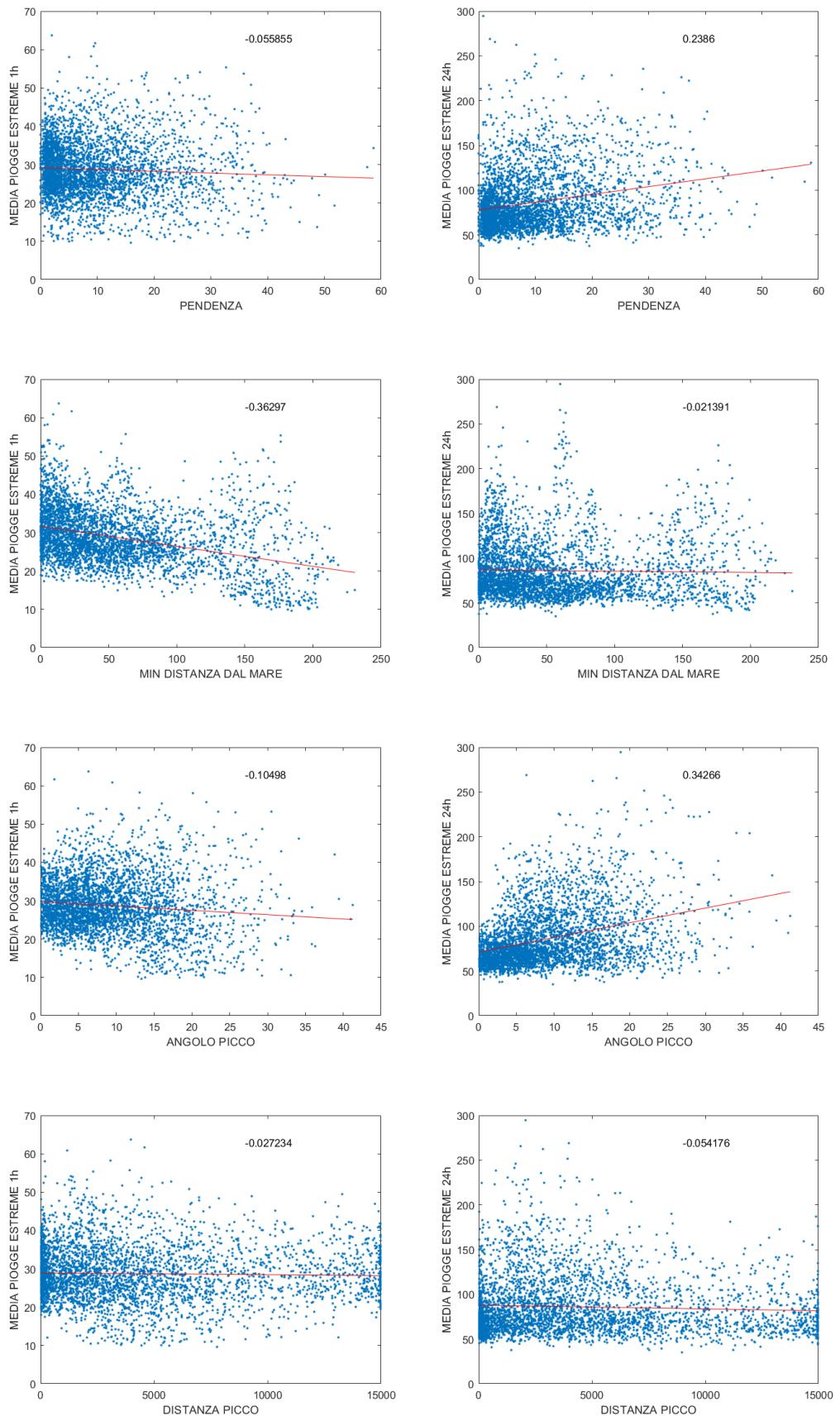


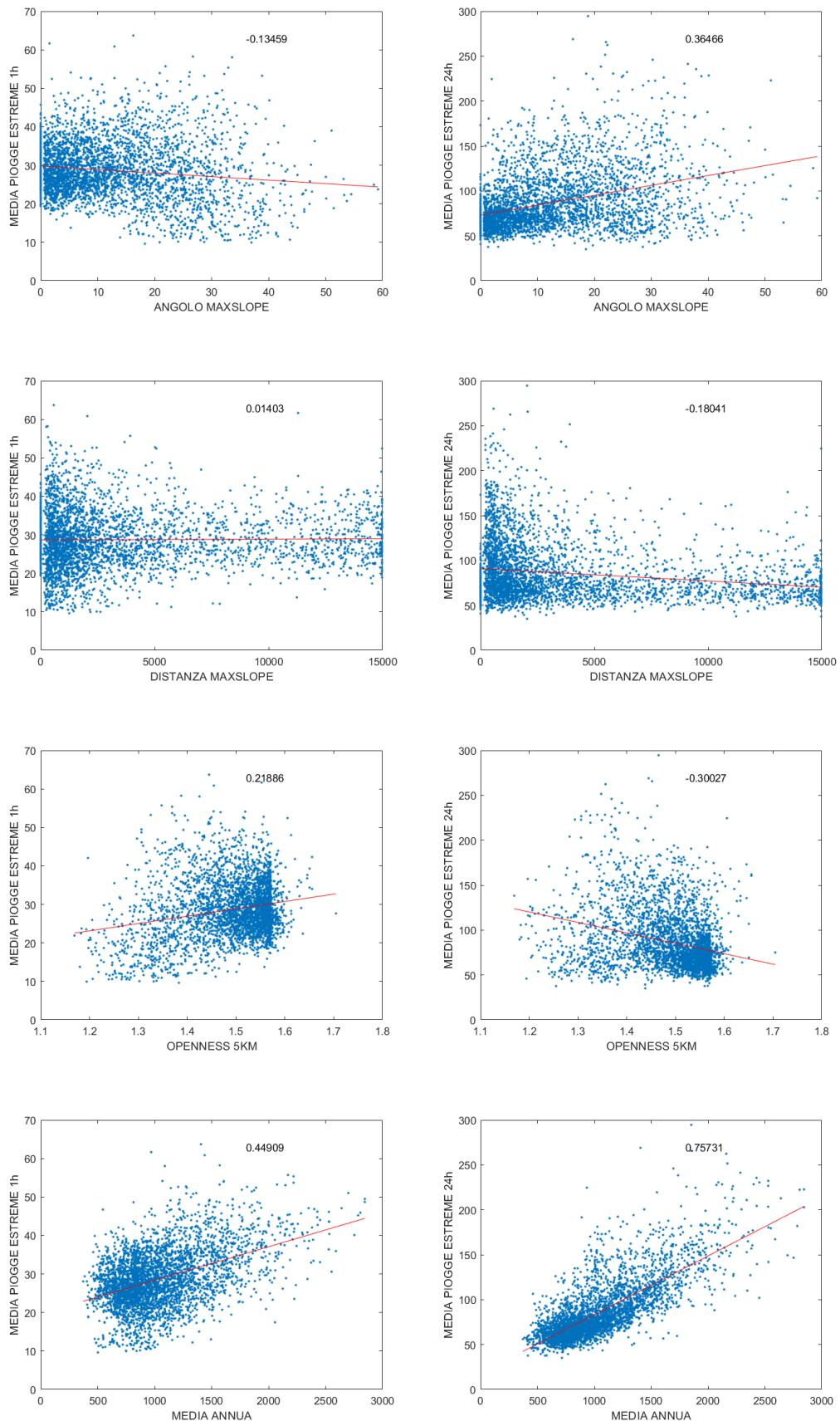
## **Allegato 2 – Scatter plot tra le variabili morfologiche e le medie degli estremi di precipitazione a 1 h e a 24 h**

Scatter plot realizzati per tutte le zone e le sottozone tra le 11 variabili morfologiche e le medie delle piogge estreme a 1 h e a 24 h.

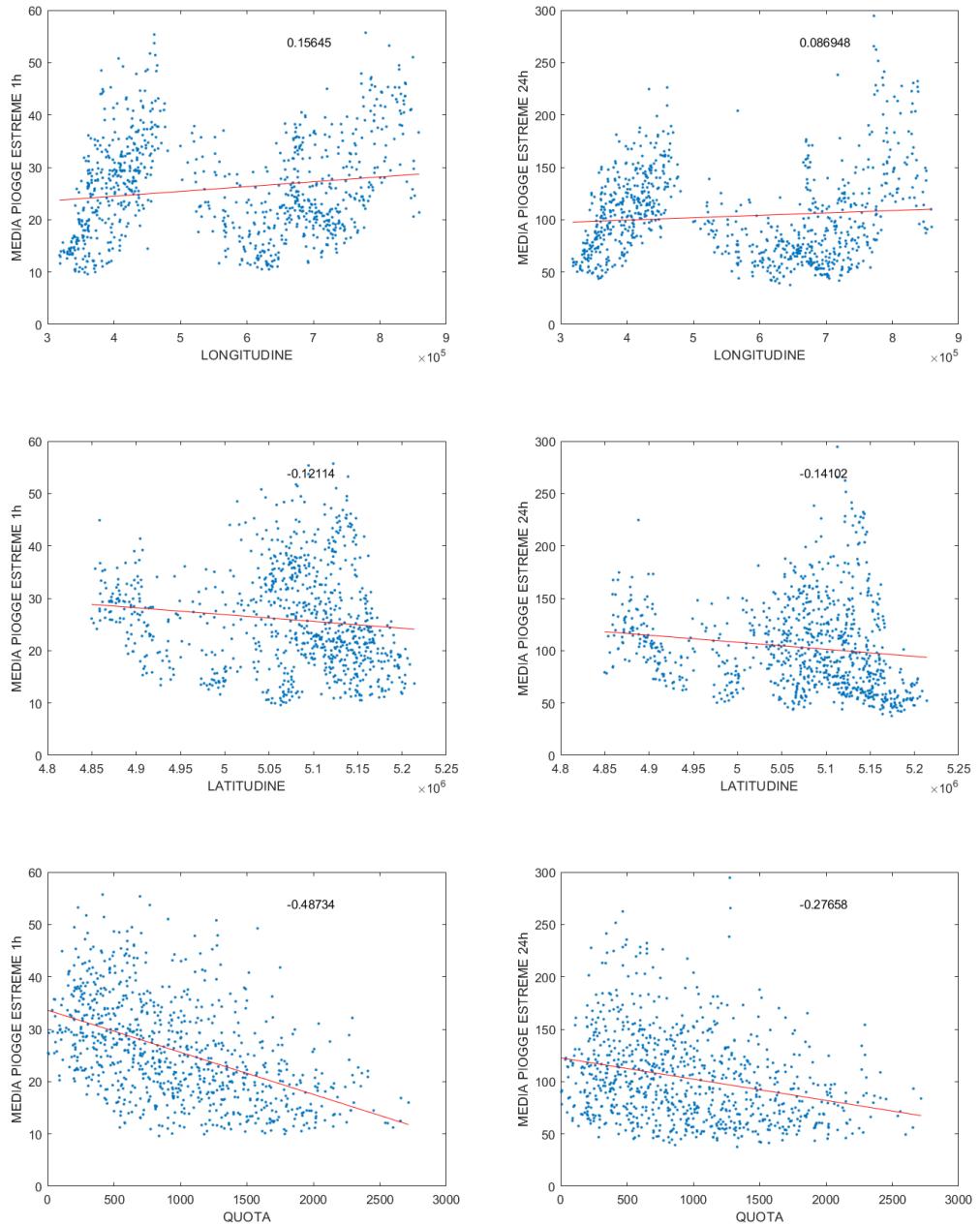
### ***Italia***

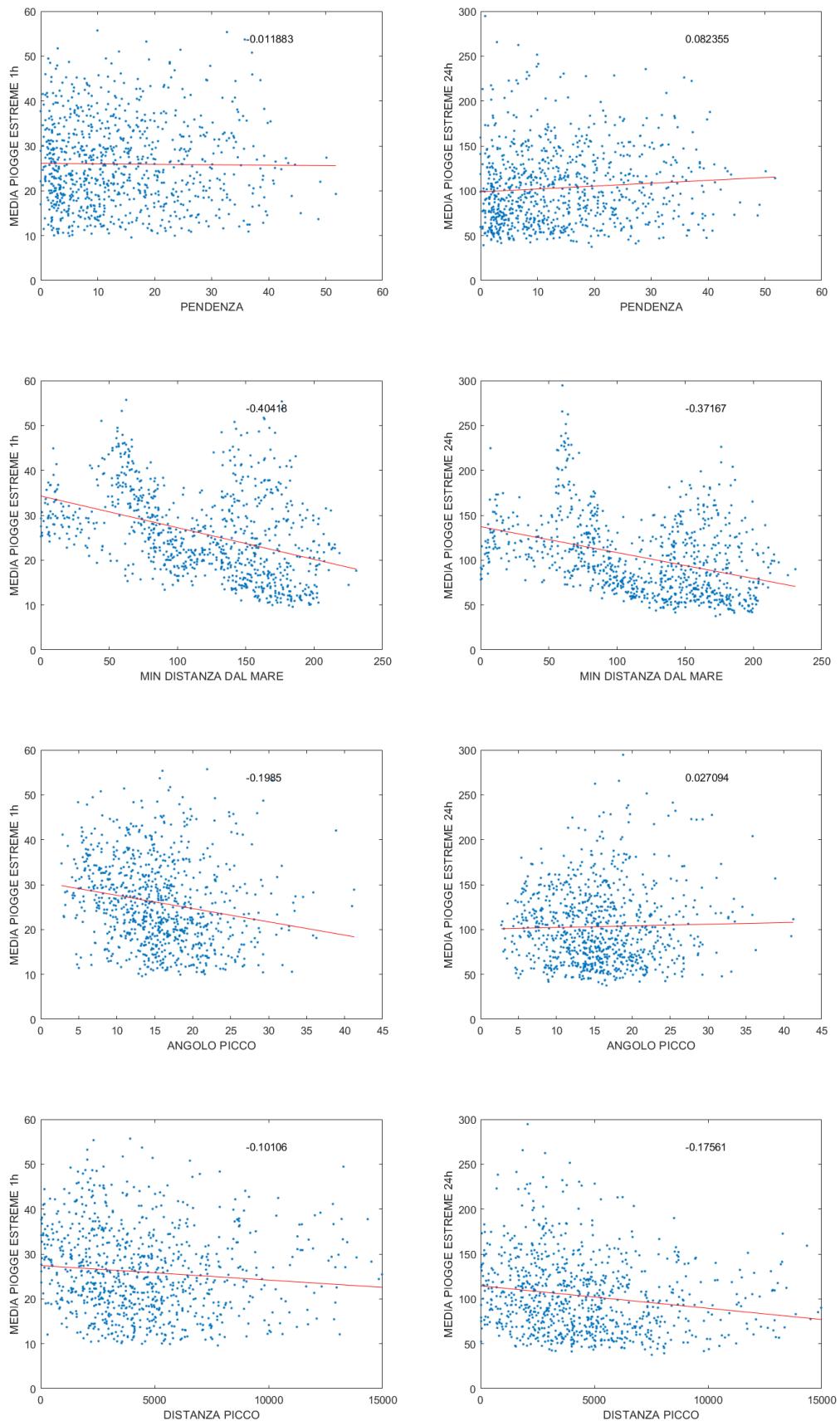


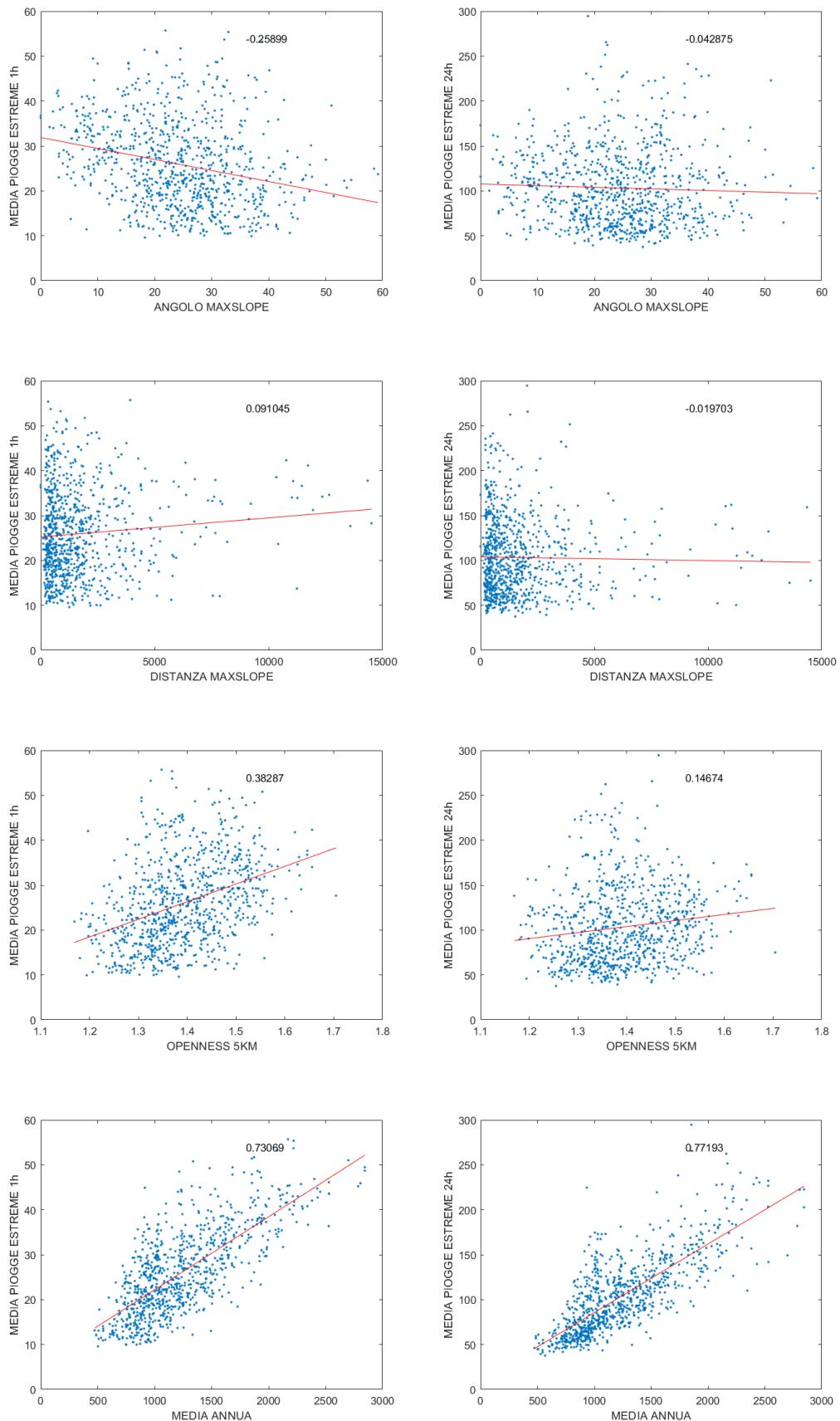




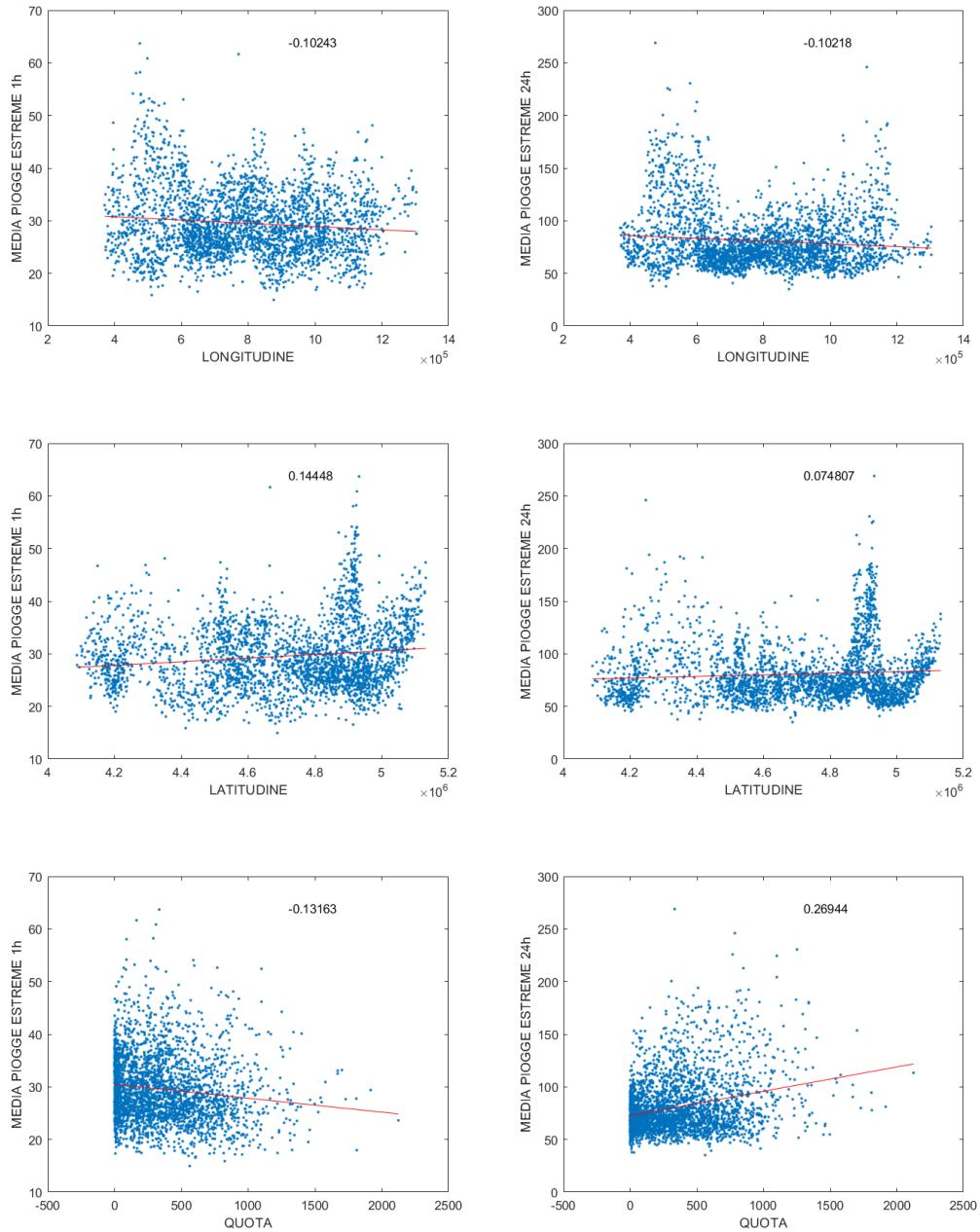
## *Alpi*

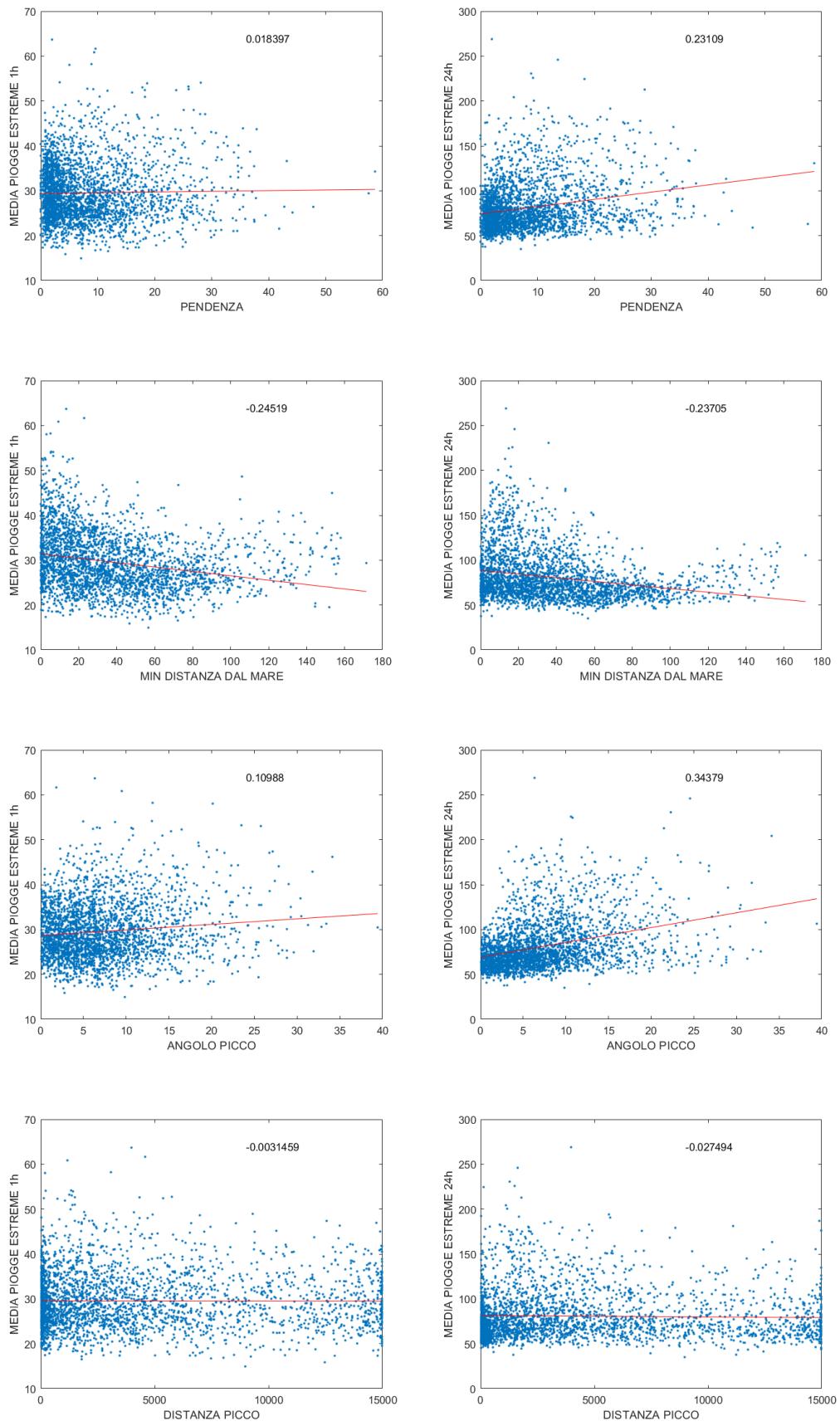


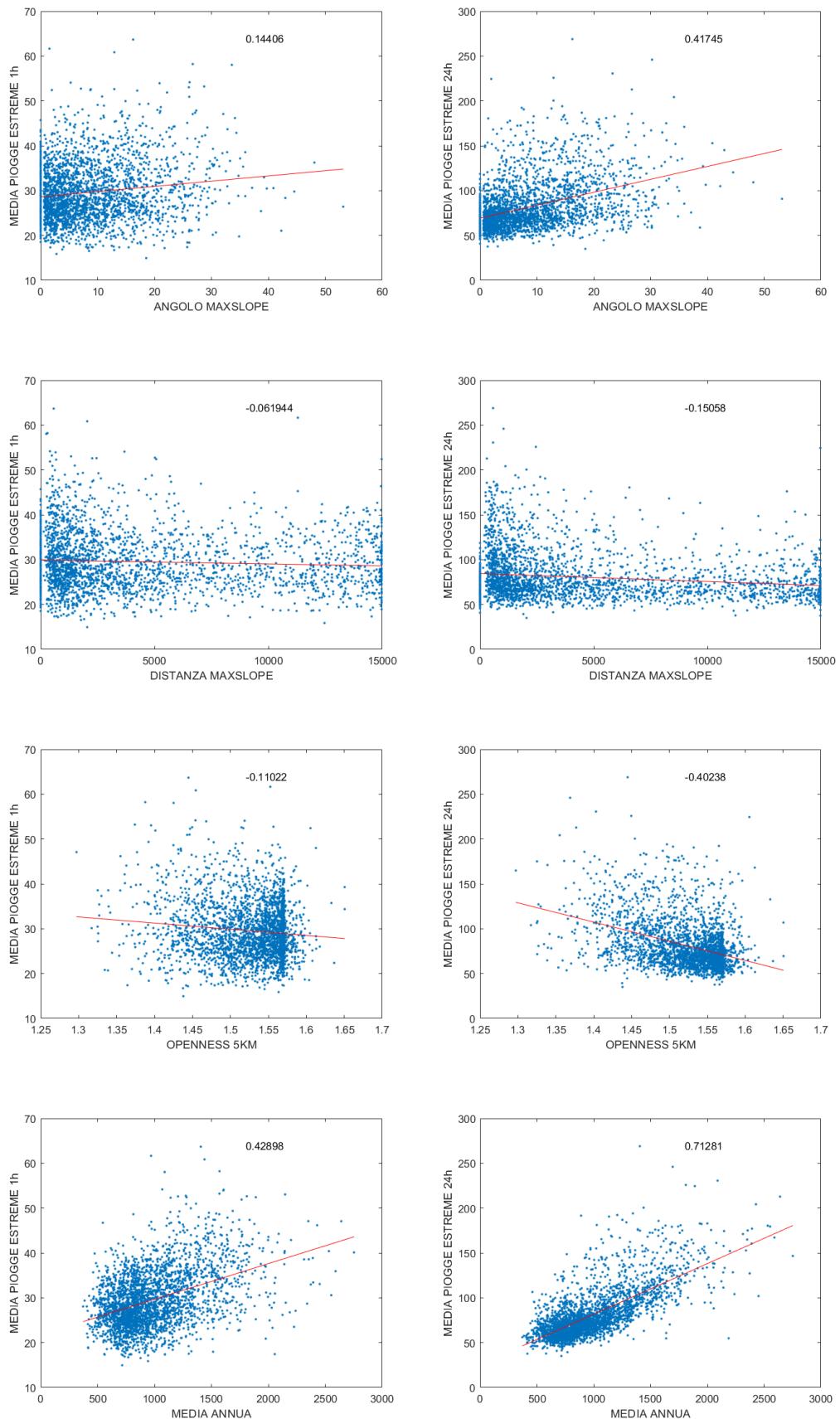




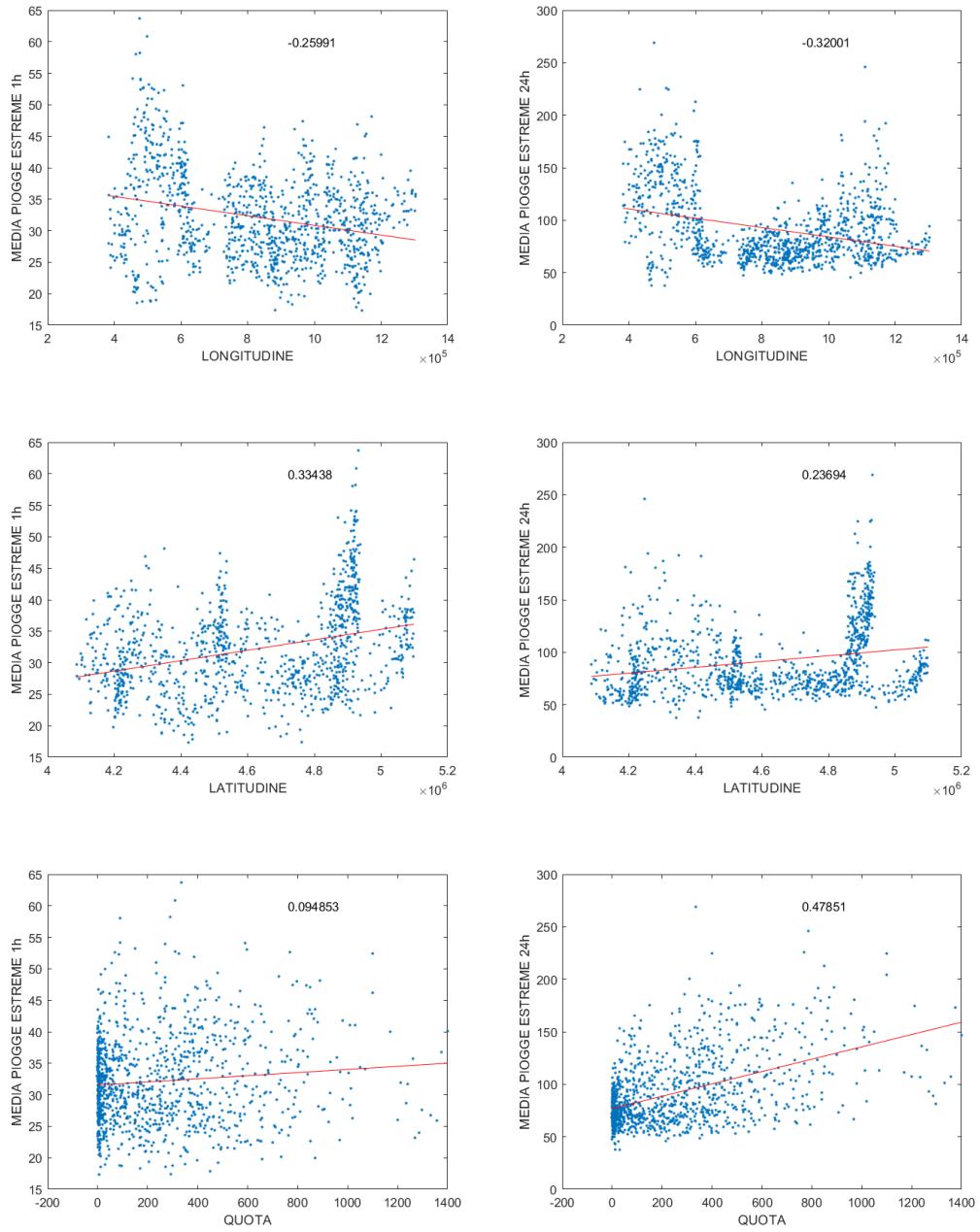
## *Appennini*

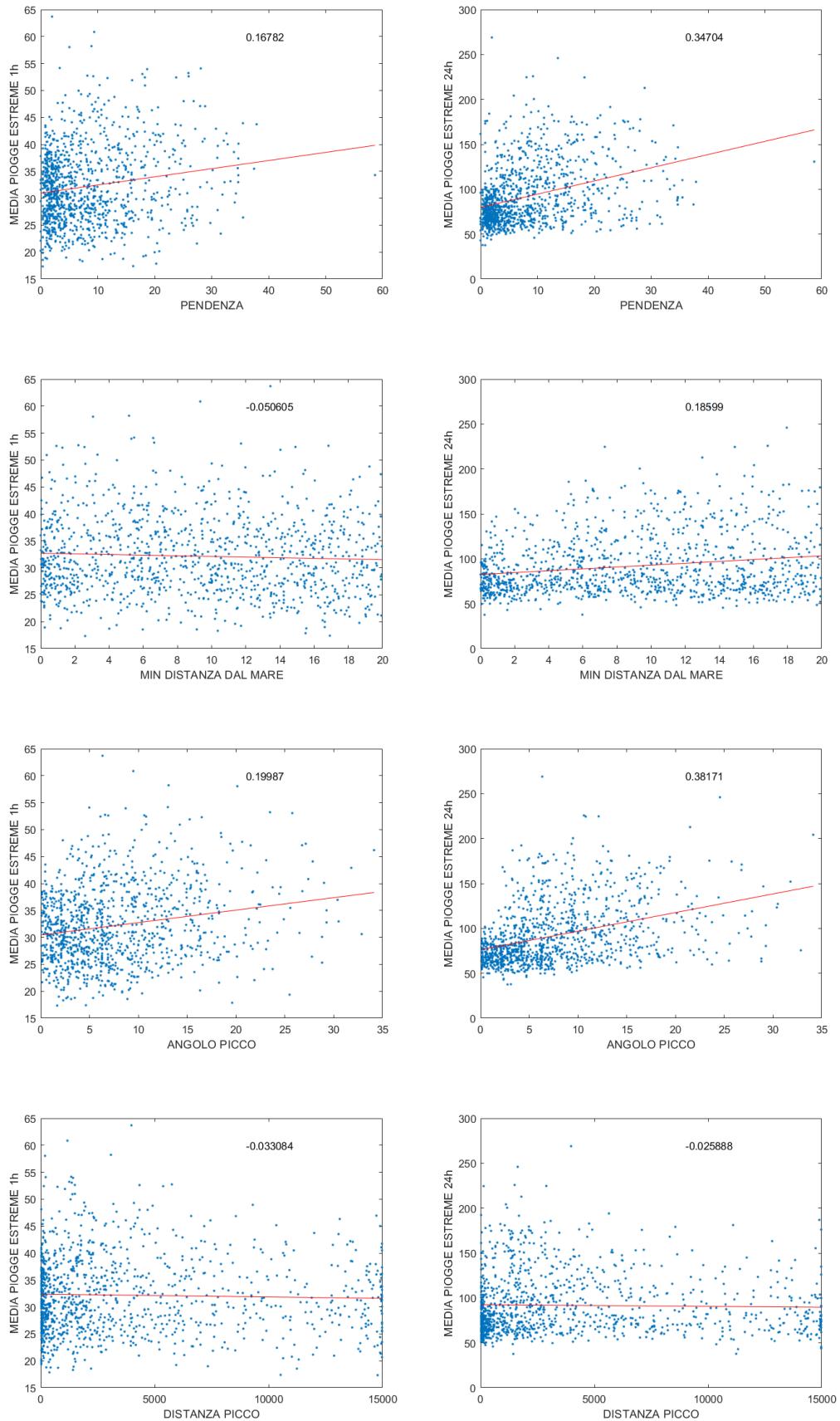


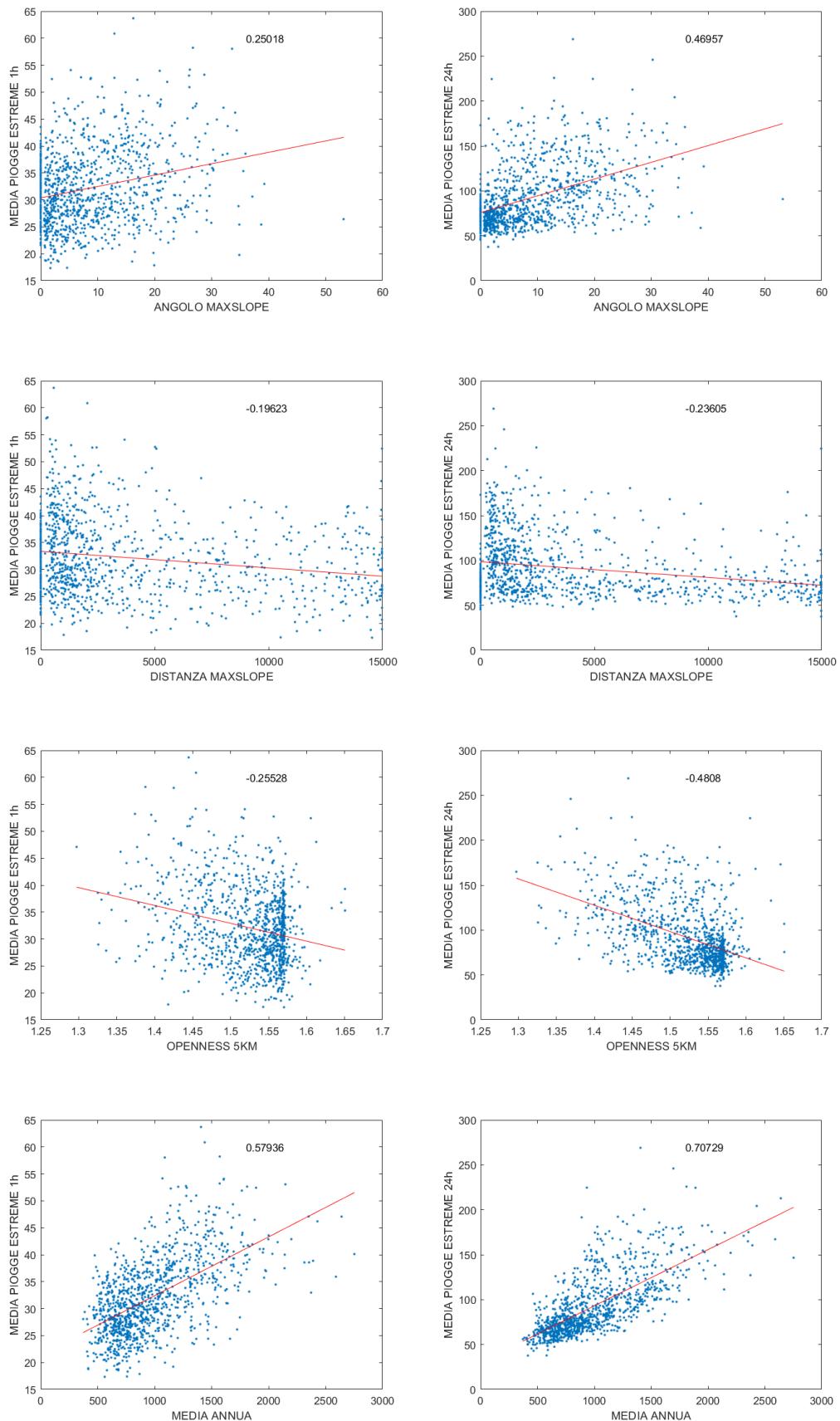




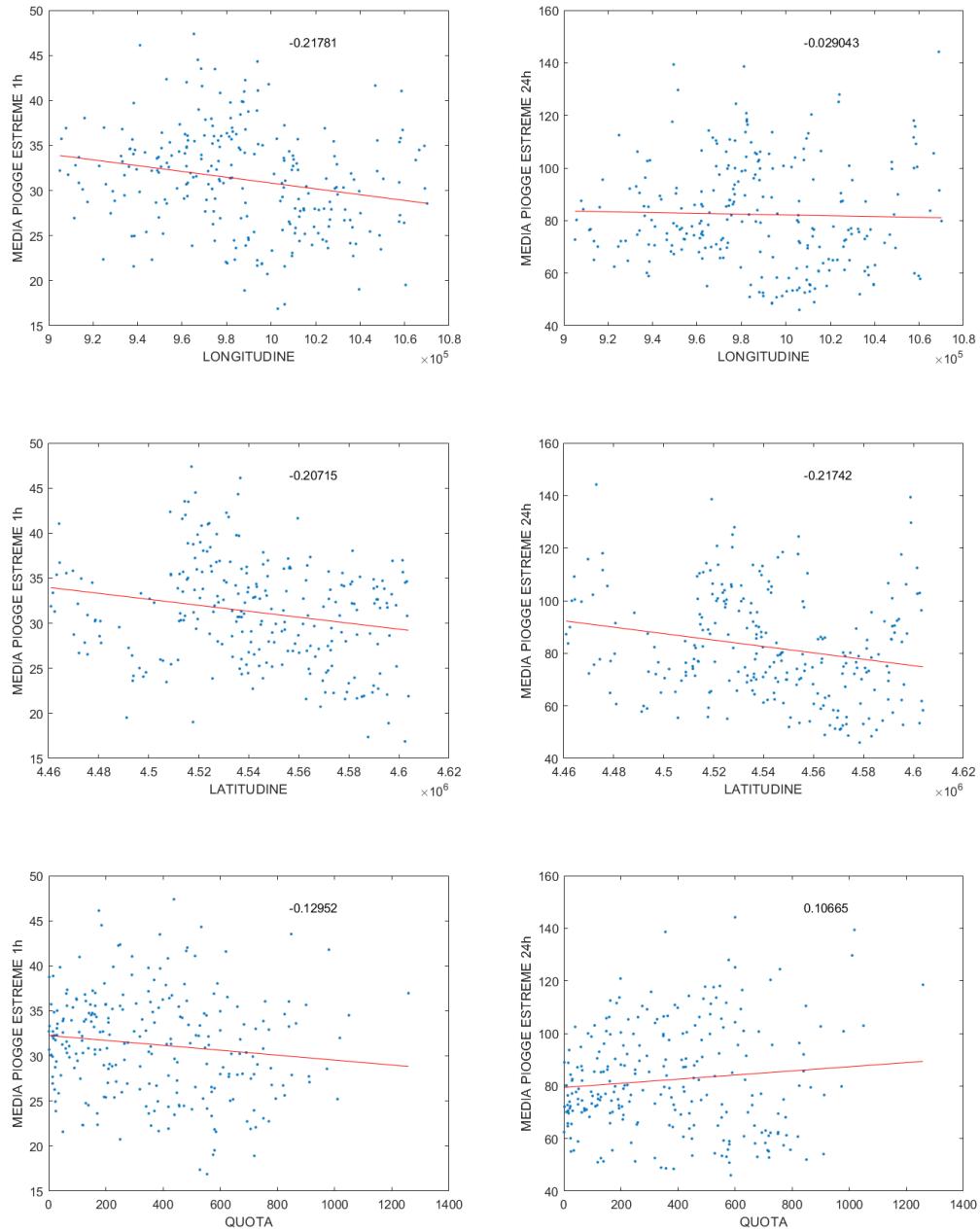
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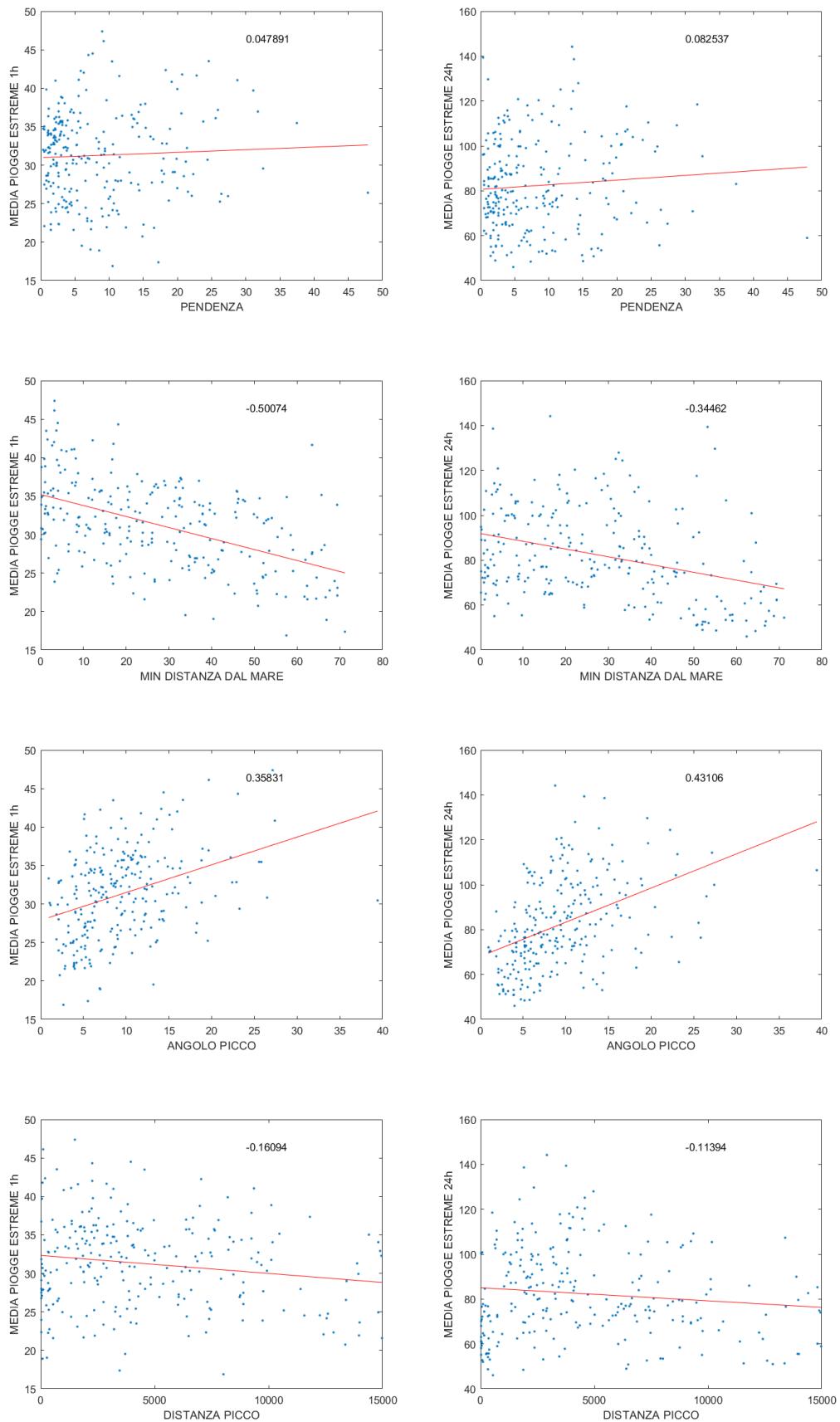


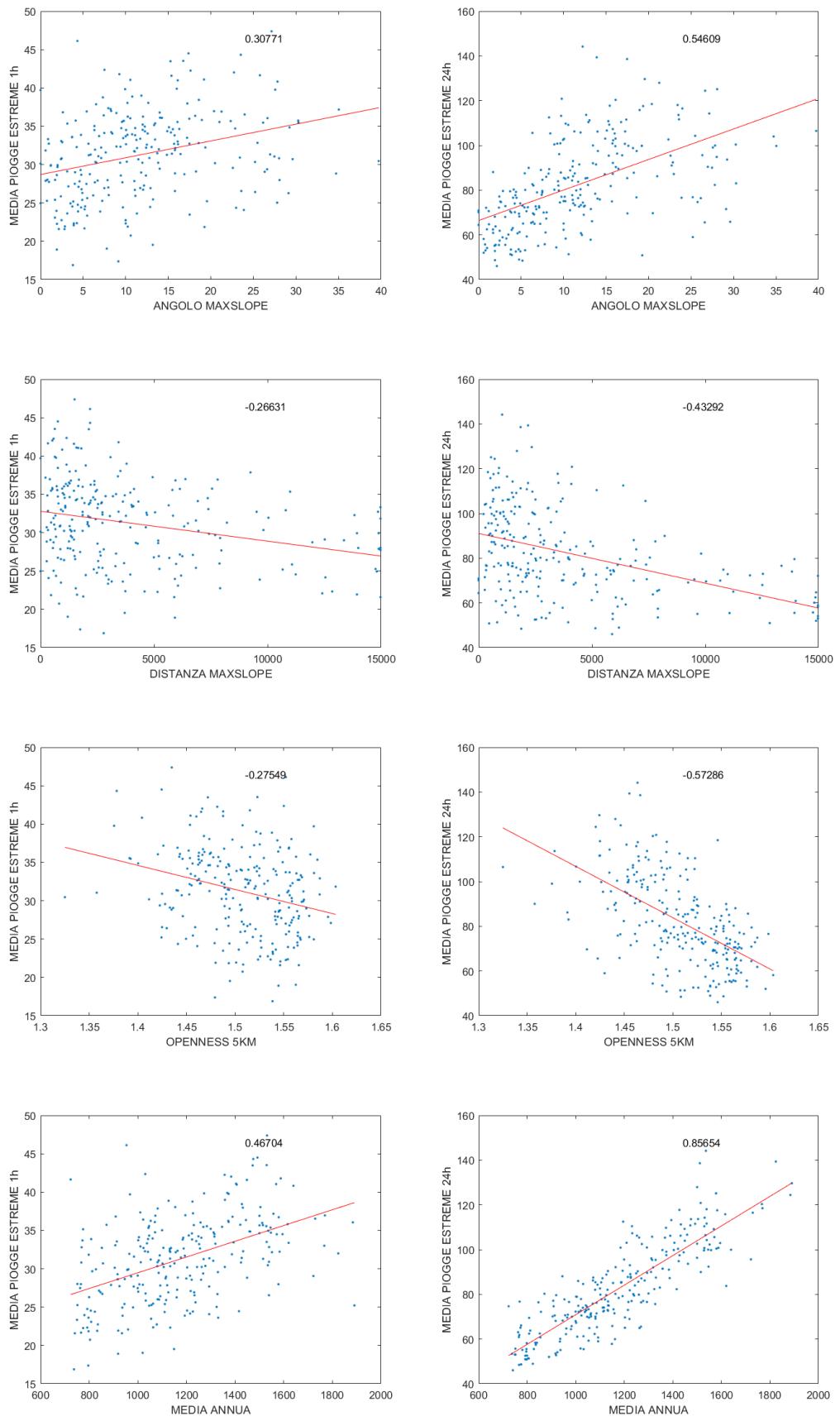




## *Campania*

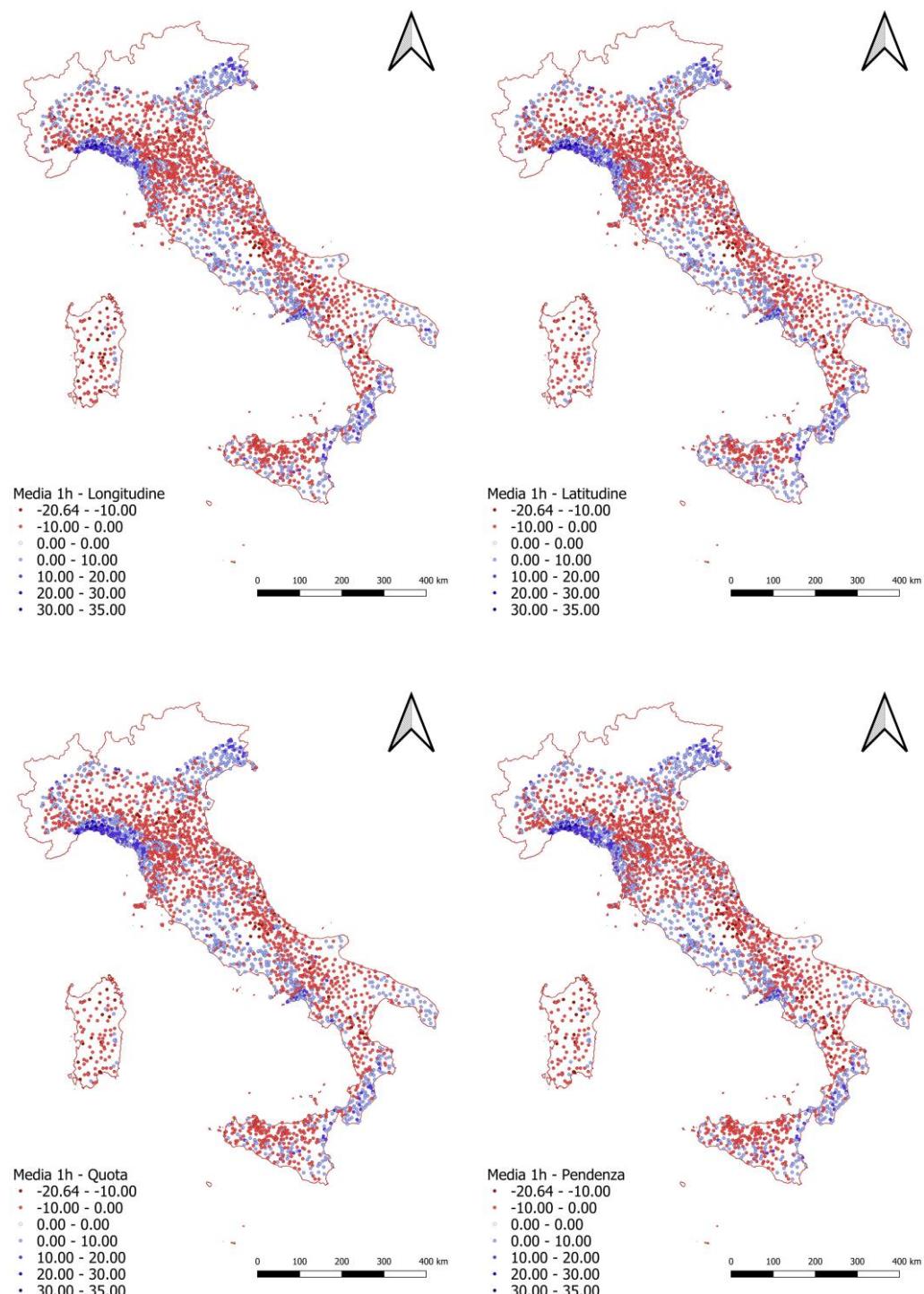


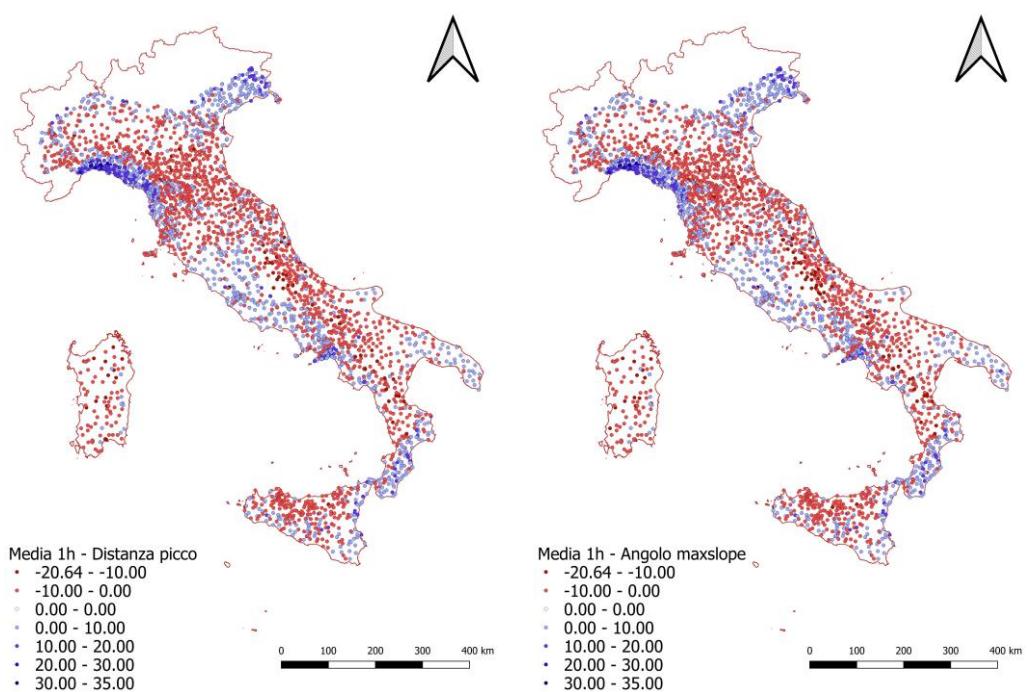
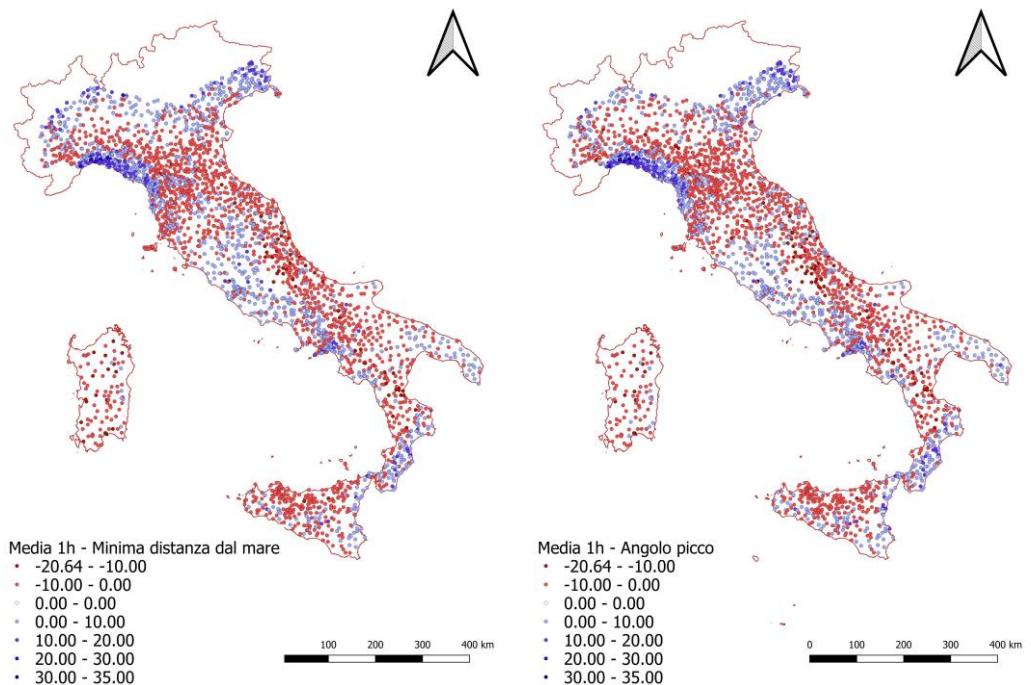


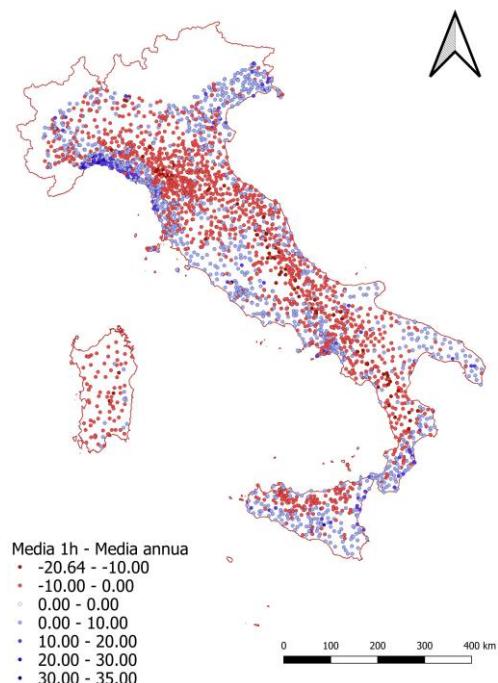
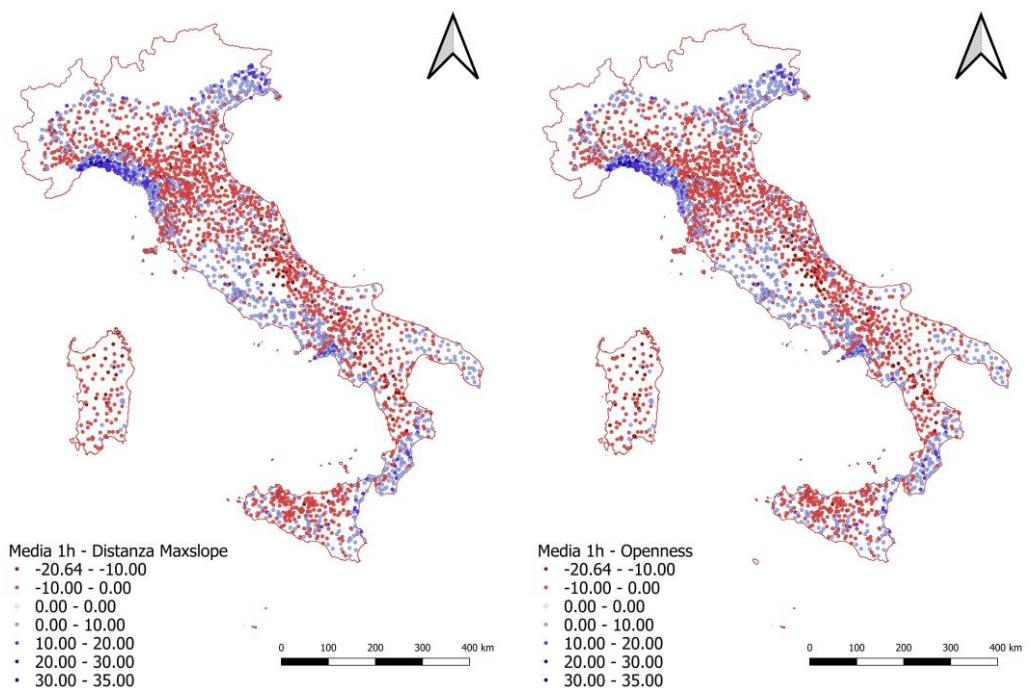


### Allegato 3 – Rappresentazione su mappa dei residui delle regressioni tra la media delle piogge estreme a 1 h e a 24 h e le variabili morfologiche per l'area Appenninica

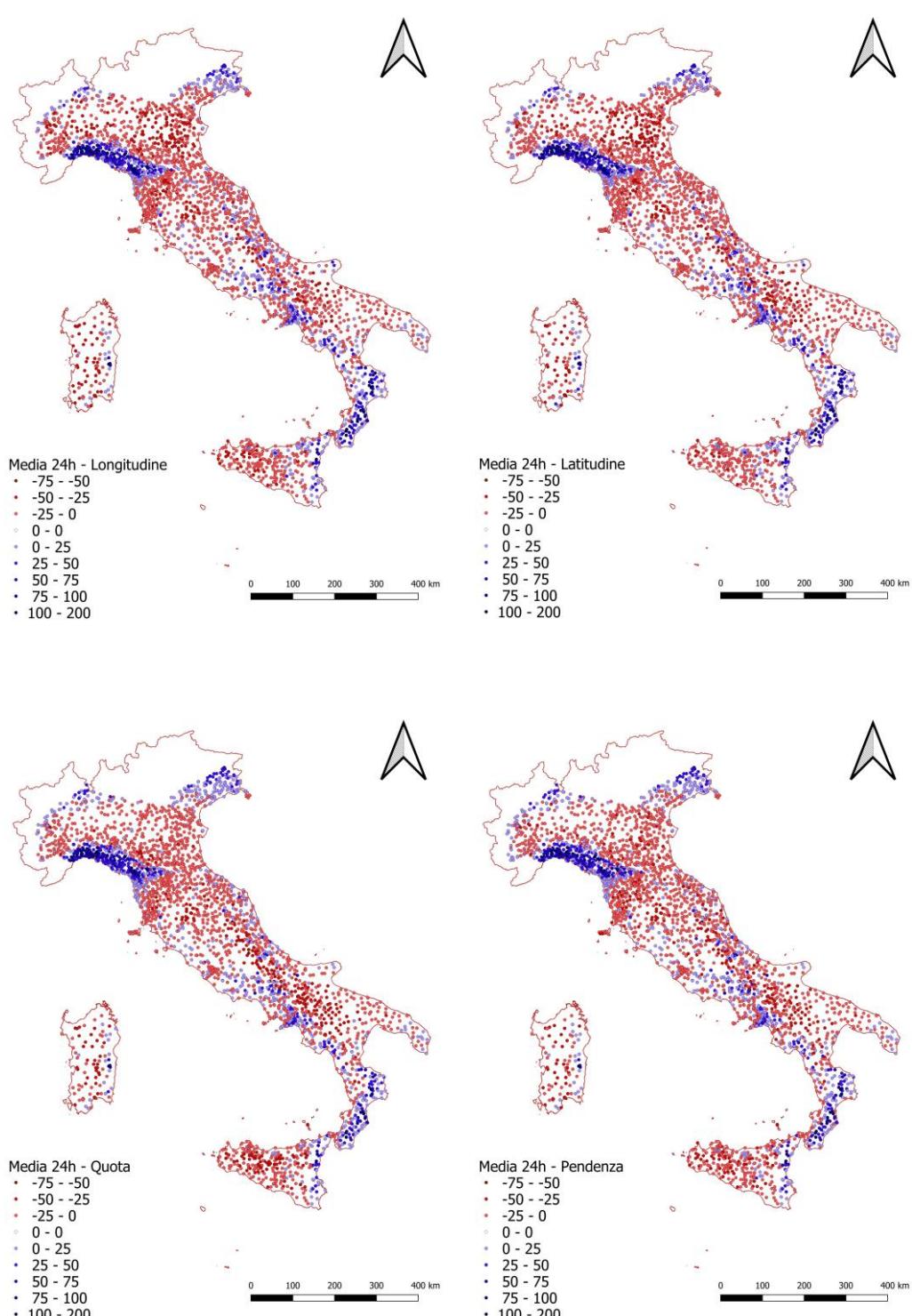
*Figura 1. Mappe dei residui delle regressioni tra la media delle precipitazioni estreme a 1 h e le variabili morfologiche, area Appennini.*

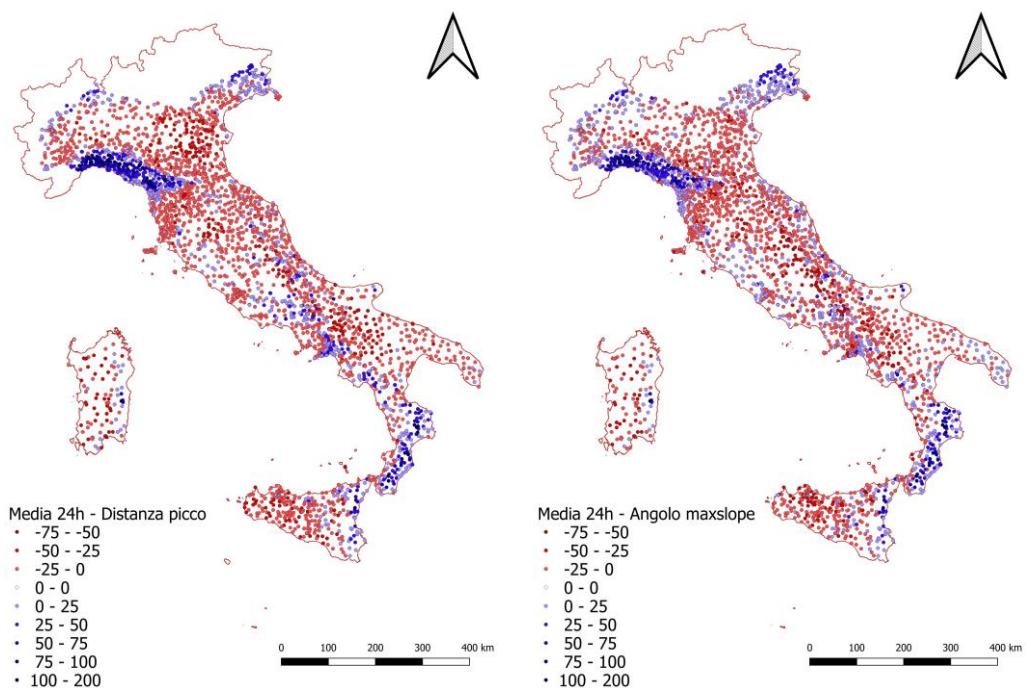
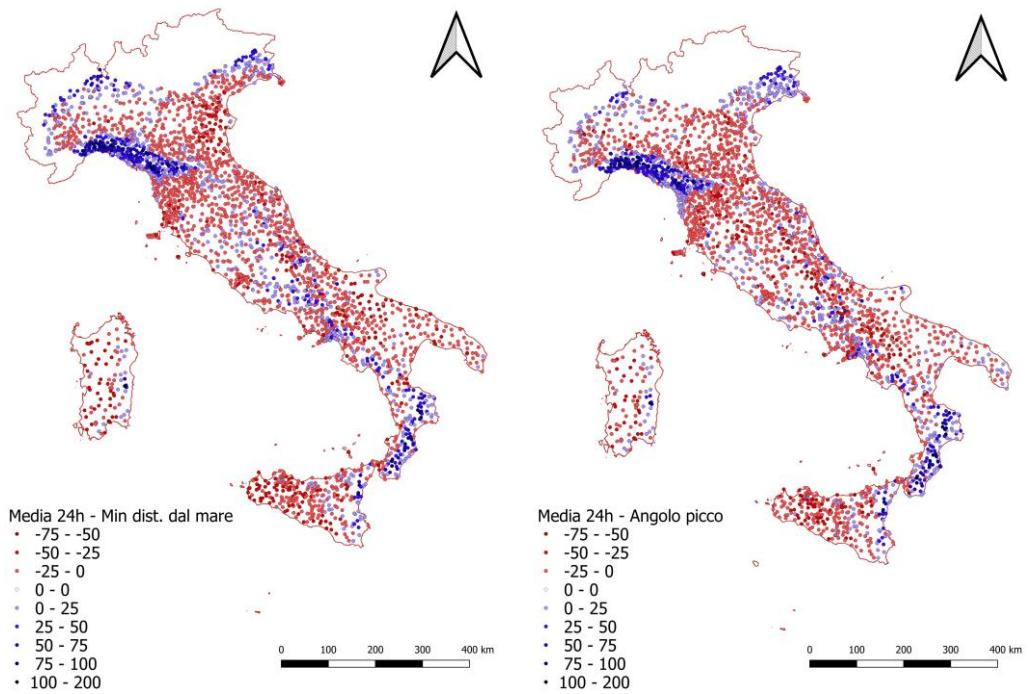


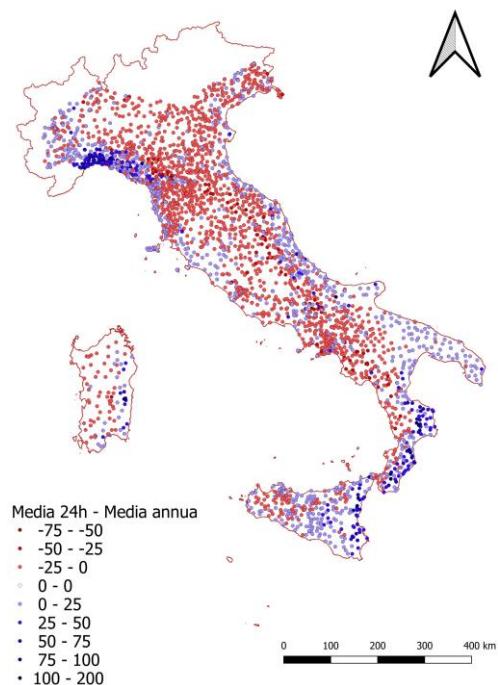
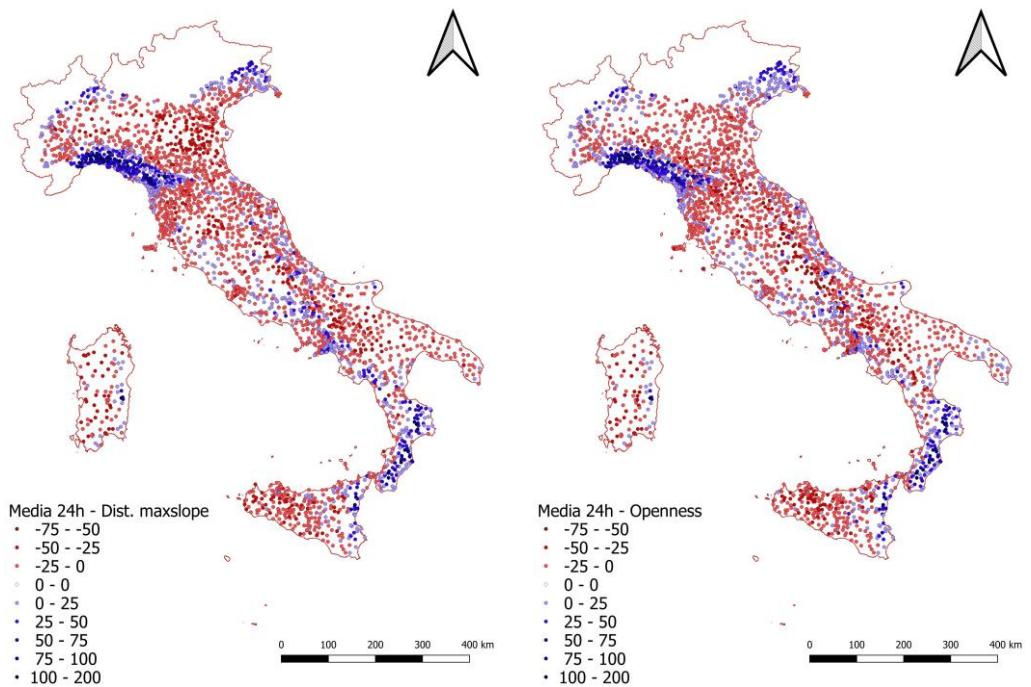




*Figura 2. Mappe dei residui delle regressioni tra la media delle precipitazioni estreme a 24 h e le variabili morfologiche, area Appennini.*







## Allegato 4 – Regressioni lineari multiple per l’area Italia

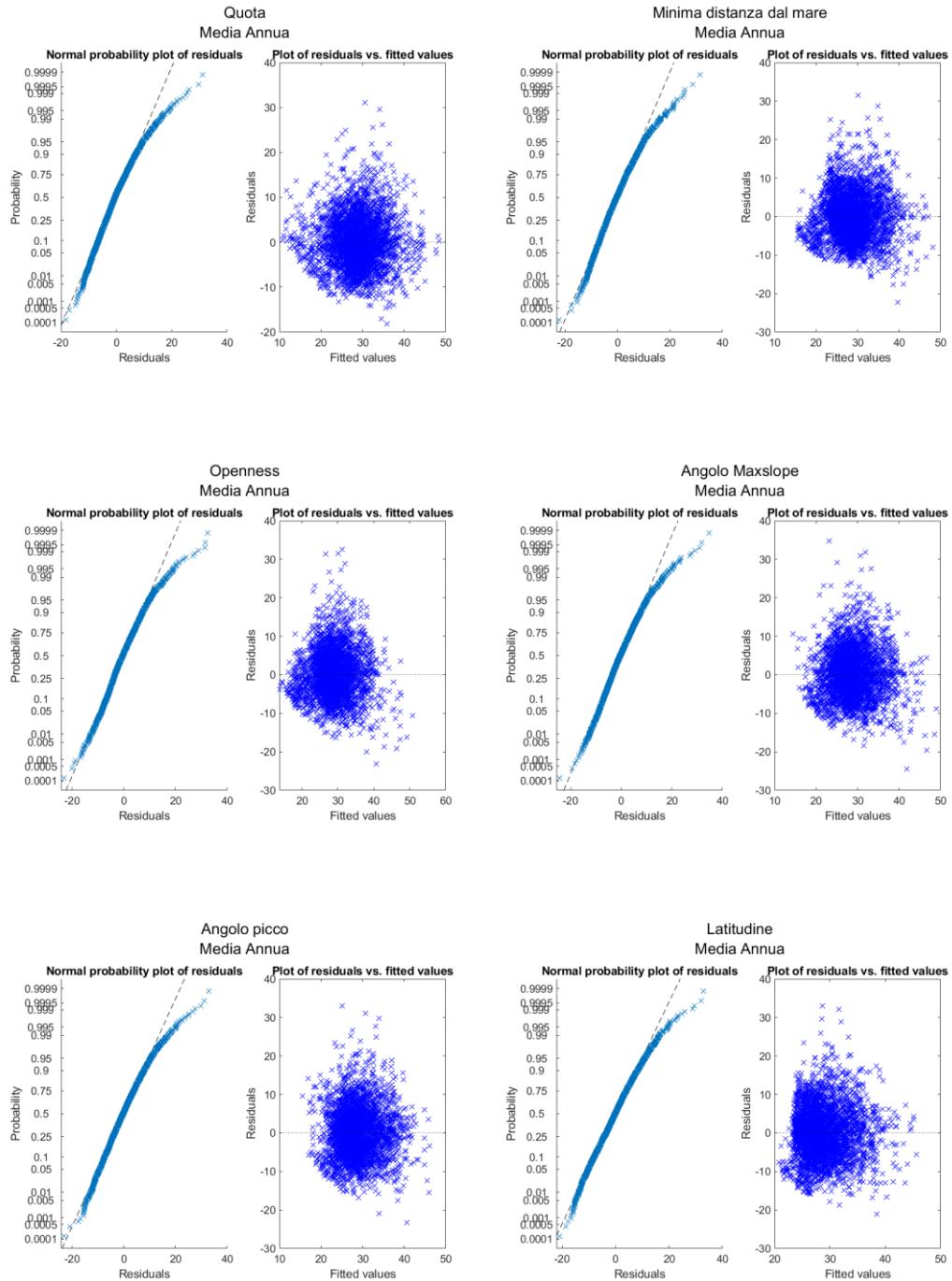
### *Regressioni con la media delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h*

Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la media degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l’area Italia. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 1. Regressione 1h con media degli estremi, 2 variabili, area Italia.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Quota	Media annua	0.439	0.439	2.08E+01	-8.00E-03	1.14E-02	1.08	1.08
Min Dist. dal Mare	Media annua	0.382	0.382	2.20E+01	-6.18E-02	9.80E-03	1.02	1.02
Openness	Media annua	0.371	0.371	-4.12E+01	3.85E+01	1.19E-02	1.15	1.15
Angolo maxslope	Media annua	0.338	0.338	1.93E+01	-2.79E-01	1.22E-02	1.24	1.24
Angolo picco	Media annua	0.304	0.303	2.01E+01	-3.77E-01	1.15E-02	1.21	1.21
Latitudine	Media annua	0.243	0.243	4.53E+01	-5.68E-06	1.02E-02	1.14	1.14
Pendenza	Media annua	0.237	0.236	2.01E+01	-1.60E-01	9.76E-03	1.08	1.08
Longitudine	Media annua	0.219	0.219	1.59E+01	4.49E-06	9.15E-03	1.03	1.03
Distanza maxslope	Media annua	0.214	0.213	1.85E+01	1.95E-04	9.18E-03	1.05	1.05
Quota	Min Dist. dal Mare	0.169	0.168	3.25E+01	-3.50E-03	-3.64E-02	1.33	1.33

Figura 3. Diagrammi diagnostici per regressione 1h con media degli estremi, 2 variabili, area Italia



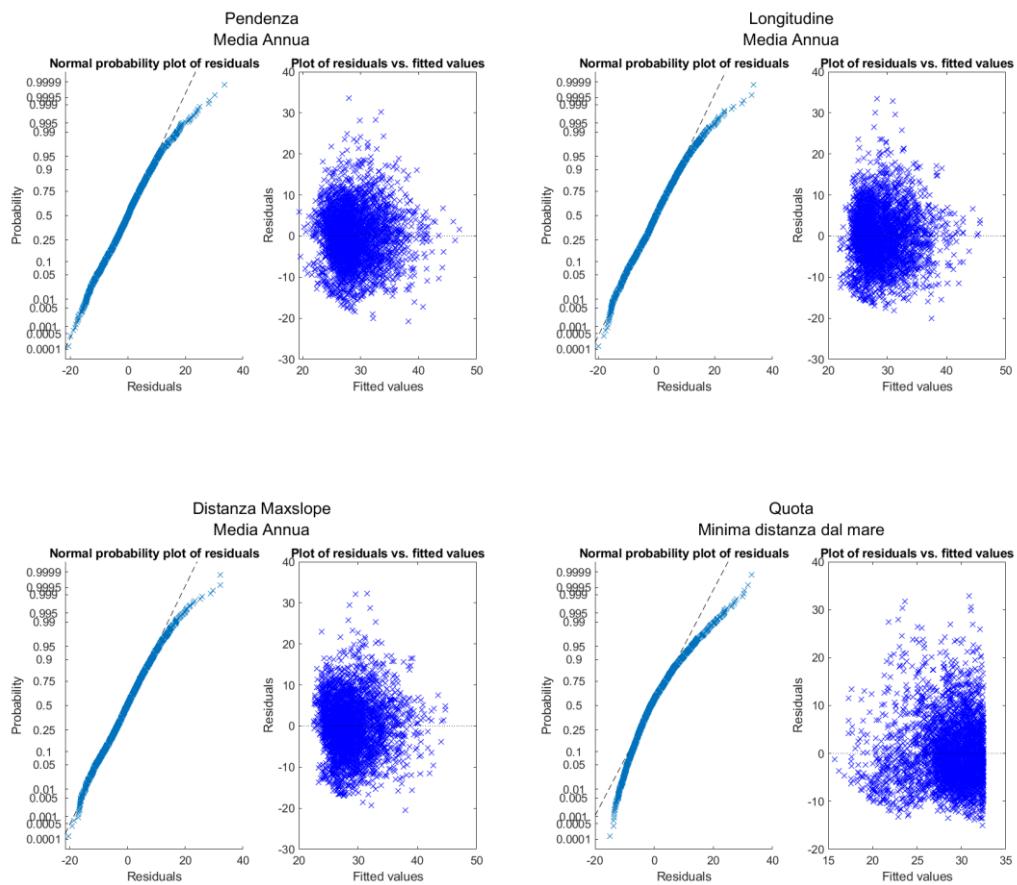
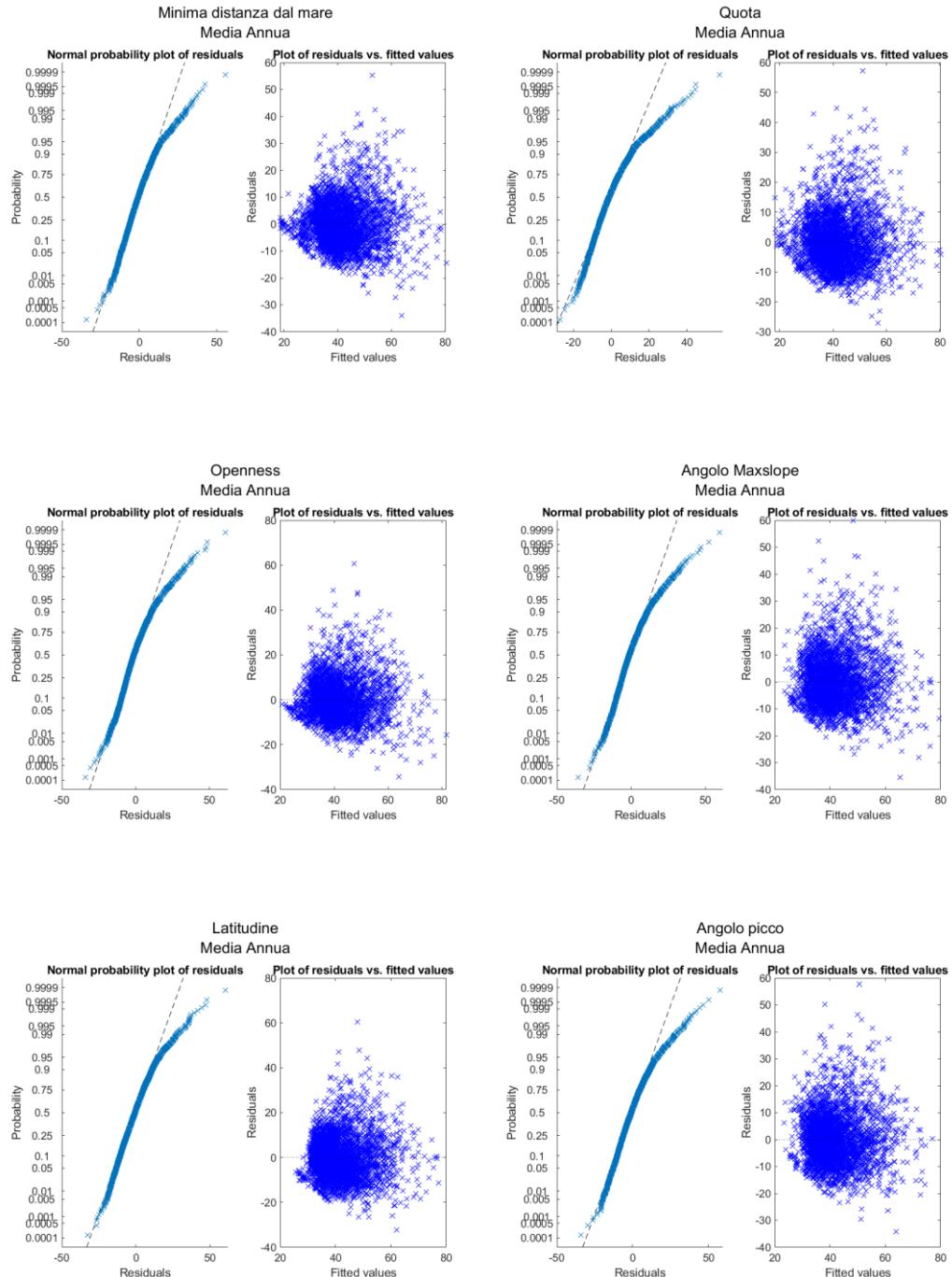


Tabella 2. Regressione 3h con media degli estremi, 2 variabili, area Italia

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.517	0.517	2.53E+01	-9.19E-02	2.05E-02	1.02	1.02
Quota	Media annua	0.500	0.500	2.32E+01	-9.77E-03	2.21E-02	1.08	1.08
Openness	Media annua	0.444	0.443	-4.56E+01	4.27E+01	2.23E-02	1.15	1.15
Angolo maxslope	Media annua	0.426	0.426	2.14E+01	-3.05E-01	2.27E-02	1.24	1.24
Latitudine	Media annua	0.410	0.409	6.53E+01	-9.63E-06	2.14E-02	1.14	1.14
Angolo picco	Media annua	0.408	0.408	2.24E+01	-4.02E-01	2.19E-02	1.21	1.21
Pendenza	Media annua	0.378	0.378	2.23E+01	-1.67E-01	1.99E-02	1.08	1.08
Longitudine	Media annua	0.372	0.372	1.77E+01	4.98E-06	1.93E-02	1.03	1.03
Distanza maxslope	Media annua	0.368	0.368	2.06E+01	1.98E-04	1.93E-02	1.05	1.05
Latitudine	Min Dist. dal Mare	0.155	0.155	-1.24E+01	1.26E-05	-1.13E-01	1.53	1.53

Figura 4. Diagrammi diagnostici per regressione 3h con media degli estremi, 2 variabili, area Italia



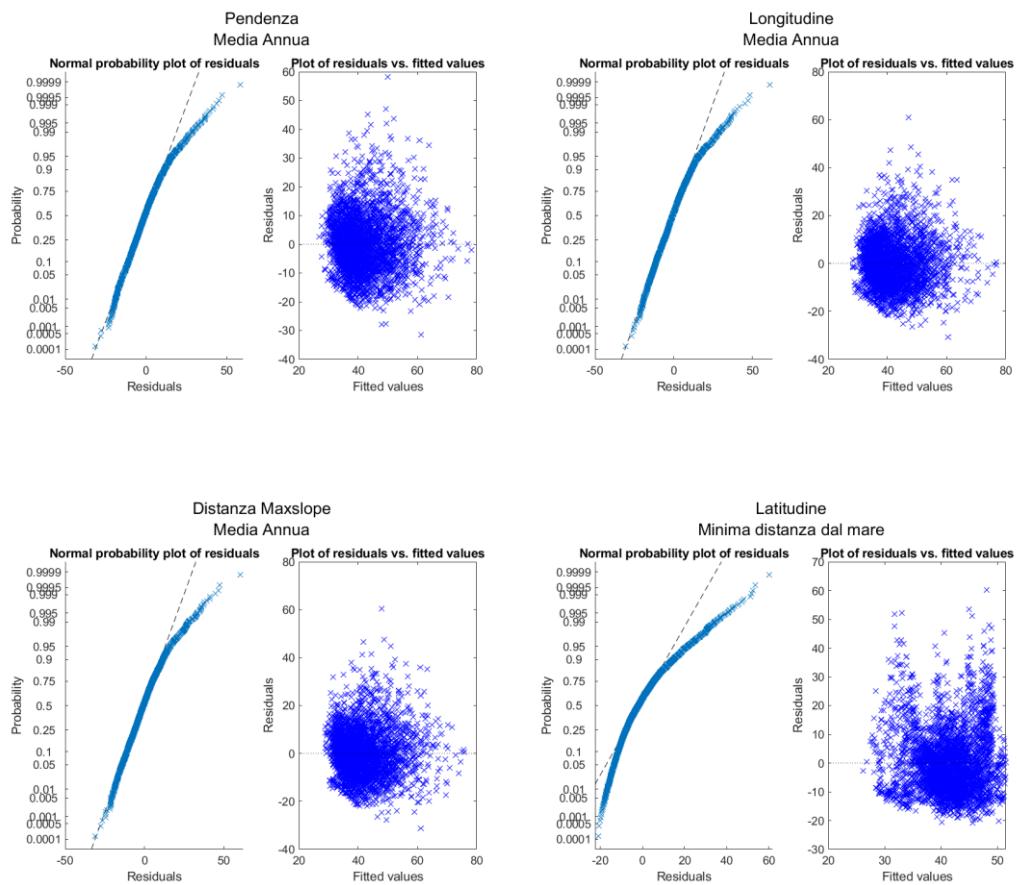
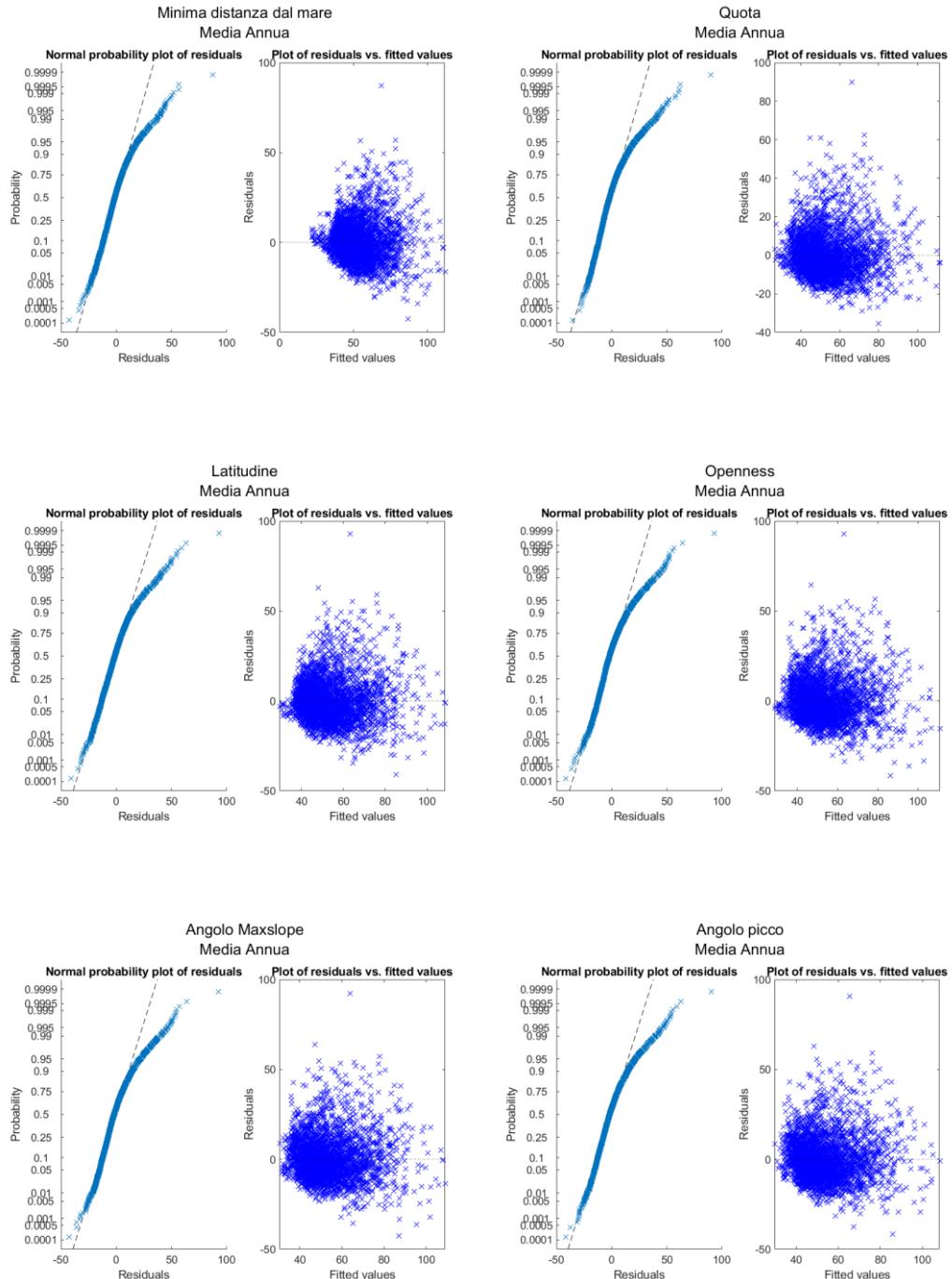


Tabella 3. Regressione 6h con media degli estremi, 2 variabili, area Italia

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.581	0.581	2.53E+01	-1.04E-01	3.20E-02	1.02	1.02
Quota	Media annua	0.539	0.538	2.26E+01	-8.96E-03	3.32E-02	1.08	1.08
Latitudine	Media annua	0.515	0.514	7.42E+01	-1.17E-05	3.33E-02	1.14	1.14
Openness	Media annua	0.508	0.507	-3.44E+01	3.53E+01	3.31E-02	1.15	1.15
Angolo maxslope	Media annua	0.500	0.499	2.10E+01	-2.42E-01	3.32E-02	1.24	1.24
Angolo picco	Media annua	0.493	0.493	2.17E+01	-3.08E-01	3.25E-02	1.21	1.21
Pendenza	Media annua	0.483	0.483	2.16E+01	-1.19E-01	3.10E-02	1.08	1.08
Longitudine	Media annua	0.482	0.482	1.80E+01	4.00E-06	3.06E-02	1.03	1.03
Distanza maxslope	Media annua	0.480	0.480	2.06E+01	1.18E-04	3.05E-02	1.05	1.05
Min Dist. dal Mare	Angolo maxslope	0.150	0.150	5.35E+01	-1.26E-01	5.40E-01	1.26	1.26

Figura 5. Diagrammi diagnostici per regressione 6h con media degli estremi, 2 variabili, area Italia



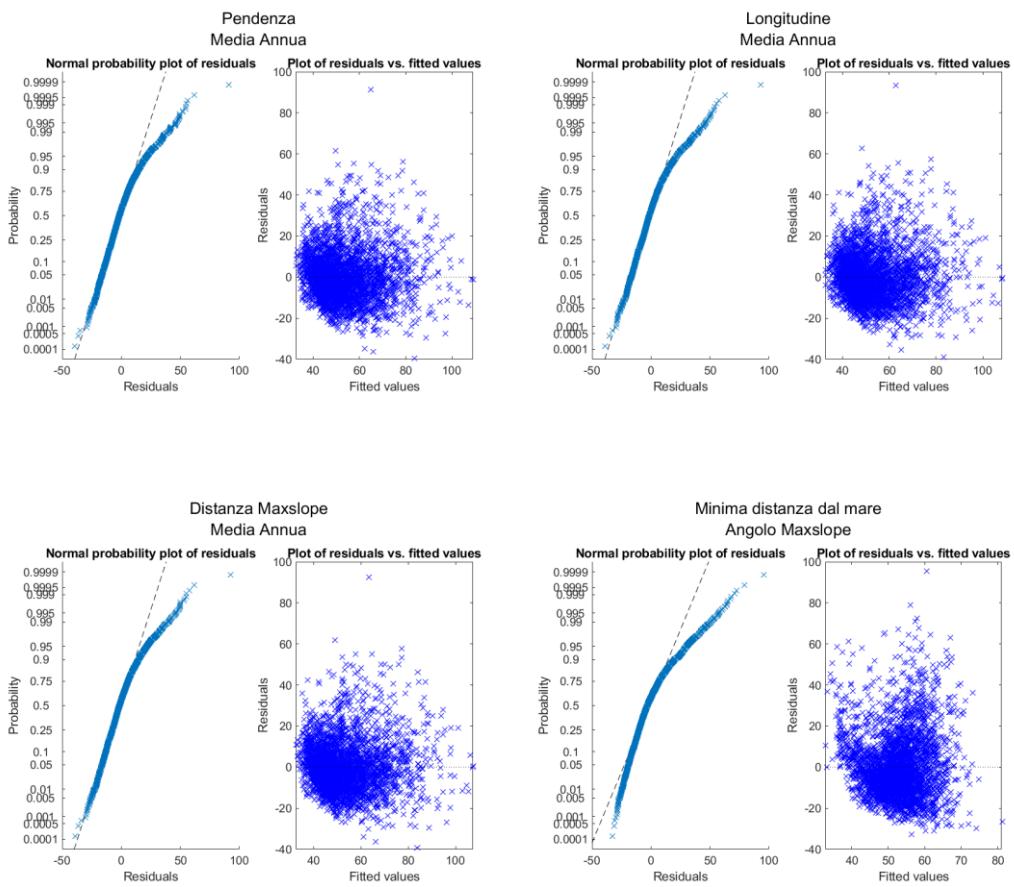
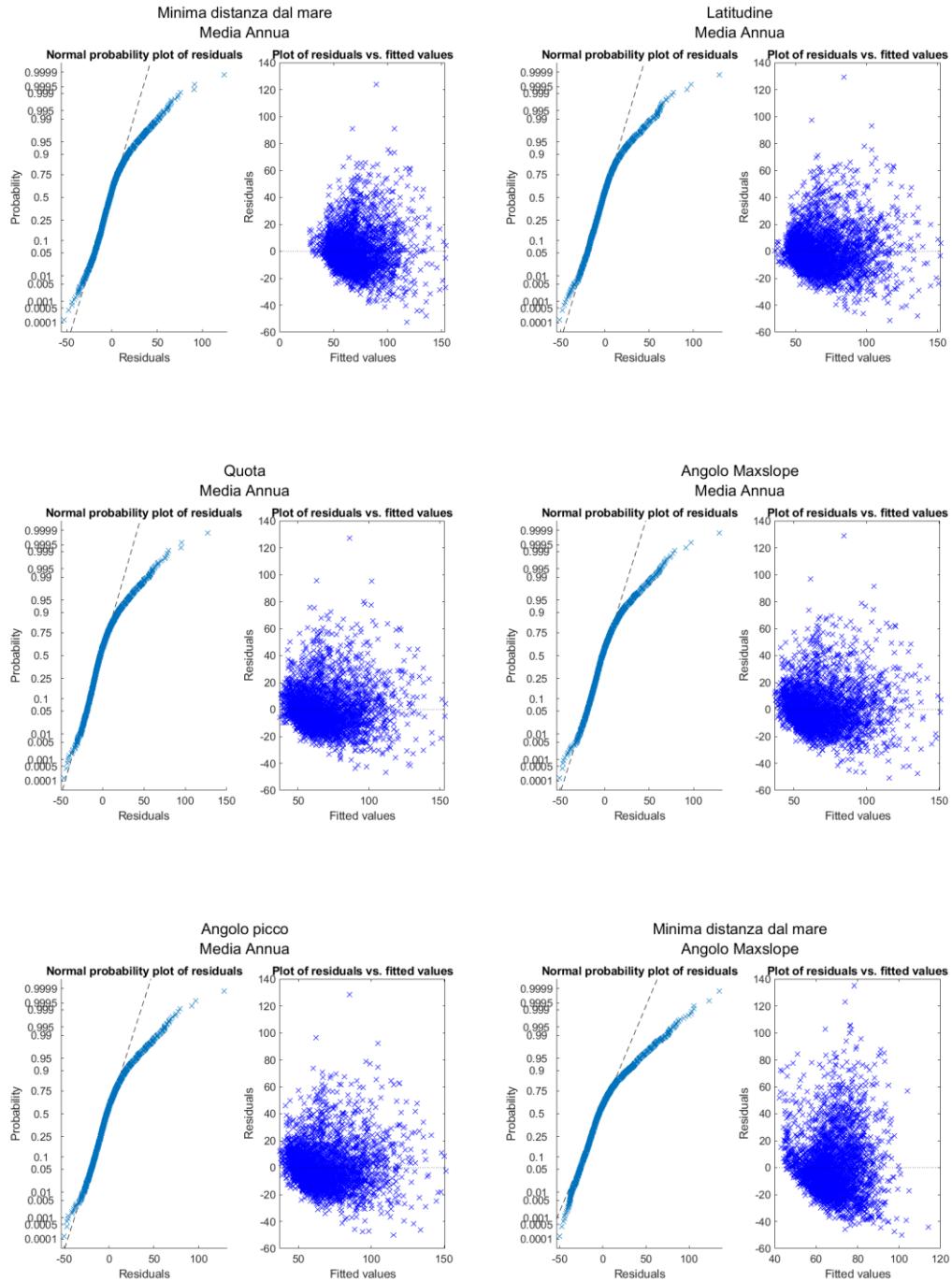


Tabella 4. Regressione 12h con media degli estremi, 2 variabili, area Italia

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.600	0.600	2.36E+01	-1.02E-01	4.78E-02	1.02	1.02
Latitudine	Media annua	0.571	0.571	7.41E+01	-1.21E-05	4.92E-02	1.14	1.14
Quota	Media annua	0.567	0.567	2.06E+01	-6.33E-03	4.81E-02	1.08	1.08
Angolo maxslope	Media annua	0.554	0.554	1.96E+01	-9.58E-02	4.72E-02	1.24	1.24
Angolo picco	Media annua	0.553	0.553	1.98E+01	-1.08E-01	4.68E-02	1.21	1.21
Min Dist. dal Mare	Angolo maxslope	0.166	0.166	6.48E+01	-1.48E-01	9.48E-01	1.26	1.26
Min Dist. dal Mare	Angolo picco	0.136	0.136	6.26E+01	-1.18E-01	1.28E+00	1.15	1.15
Min Dist. dal Mare	Openness	0.123	0.123	2.36E+02	-1.48E-01	-1.07E+02	1.37	1.37
Pendenza	Angolo maxslope	0.090	0.090	5.91E+01	2.20E-01	5.49E-01	1.25	1.25
Quota	Angolo maxslope	0.090	0.089	6.12E+01	-4.22E-03	7.22E-01	1.35	1.35

*Figura 6. Diagrammi diagnostici per regressione 12h con media degli estremi, 2 variabili, area Italia*



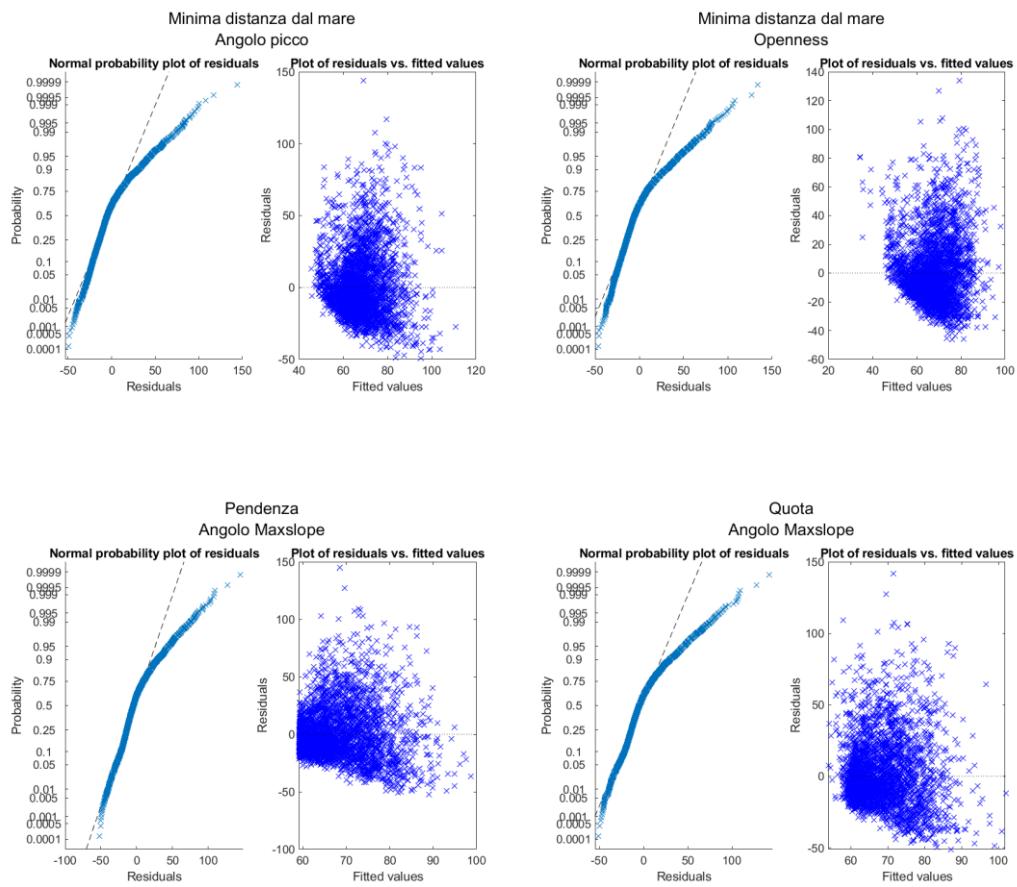
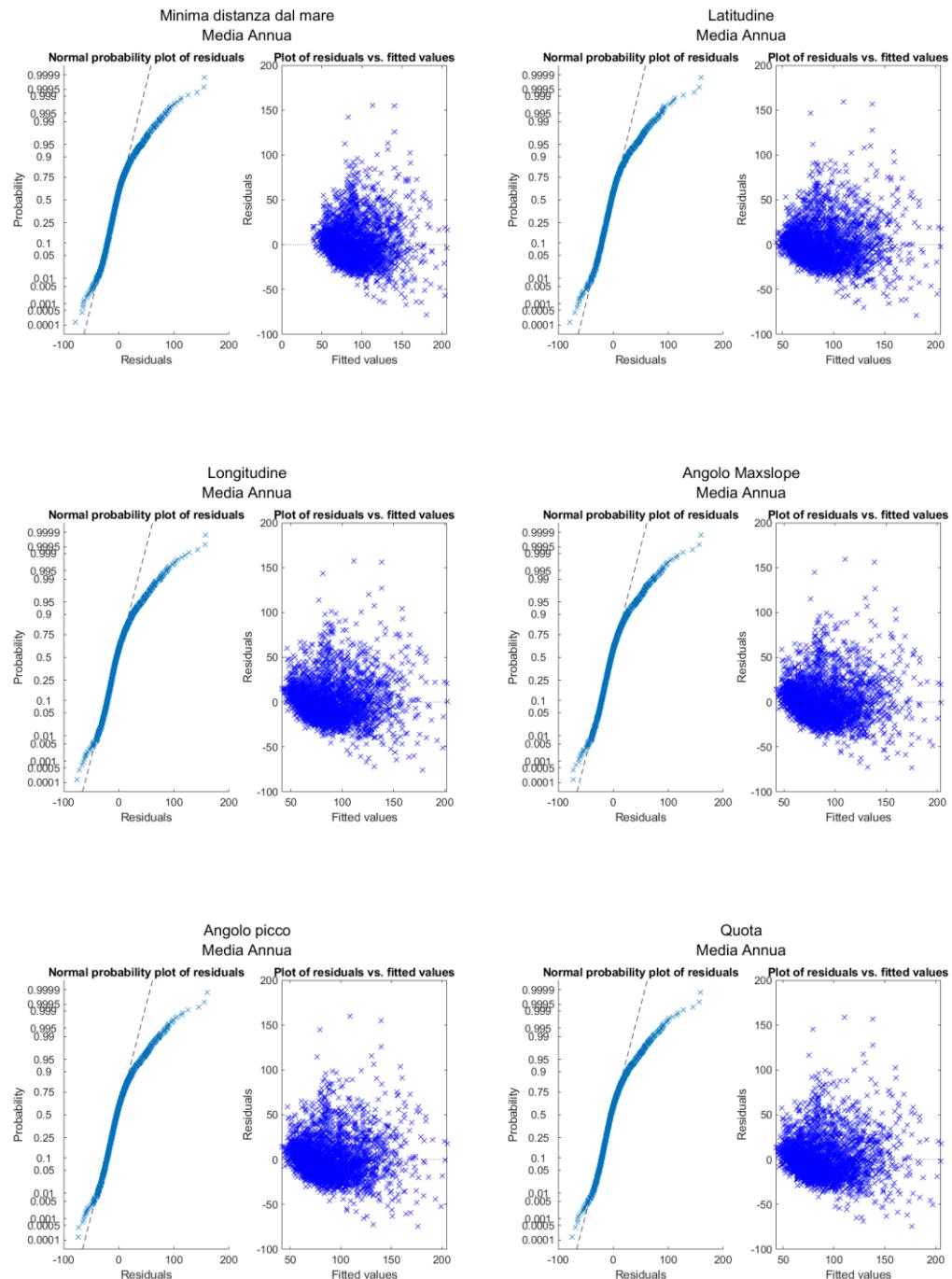


Tabella 5. Regressione 24h con media degli estremi, 2 variabili, area Italia

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.588	0.588	2.10E+01	-7.77E-02	6.67E-02	1.02	1.02
Latitudine	Media annua	0.581	0.580	6.54E+01	-1.05E-05	6.81E-02	1.14	1.14
Longitudine	Media annua	0.576	0.575	2.37E+01	-6.81E-06	6.47E-02	1.03	1.03
Angolo maxslope	Media annua	0.575	0.575	1.82E+01	1.20E-01	6.38E-02	1.24	1.24
Angolo picco	Media annua	0.575	0.574	1.78E+01	1.71E-01	6.40E-02	1.21	1.21
Quota	Media annua	0.575	0.574	1.83E+01	-2.34E-03	6.61E-02	1.08	1.08
Pendenza	Media annua	0.574	0.574	1.77E+01	1.18E-01	6.45E-02	1.08	1.08
Openness	Media annua	0.574	0.574	3.45E+01	-1.04E+01	6.45E-02	1.15	1.15
Distanza maxslope	Media annua	0.574	0.574	1.91E+01	-1.74E-04	6.49E-02	1.05	1.05
Min Dist. dal Mare	Angolo maxslope	0.178	0.177	7.79E+01	-1.52E-01	1.43E+00	1.26	1.26

Figura 7. Diagrammi diagnostici per regressione 24h con media degli estremi, 2 variabili, area Italia



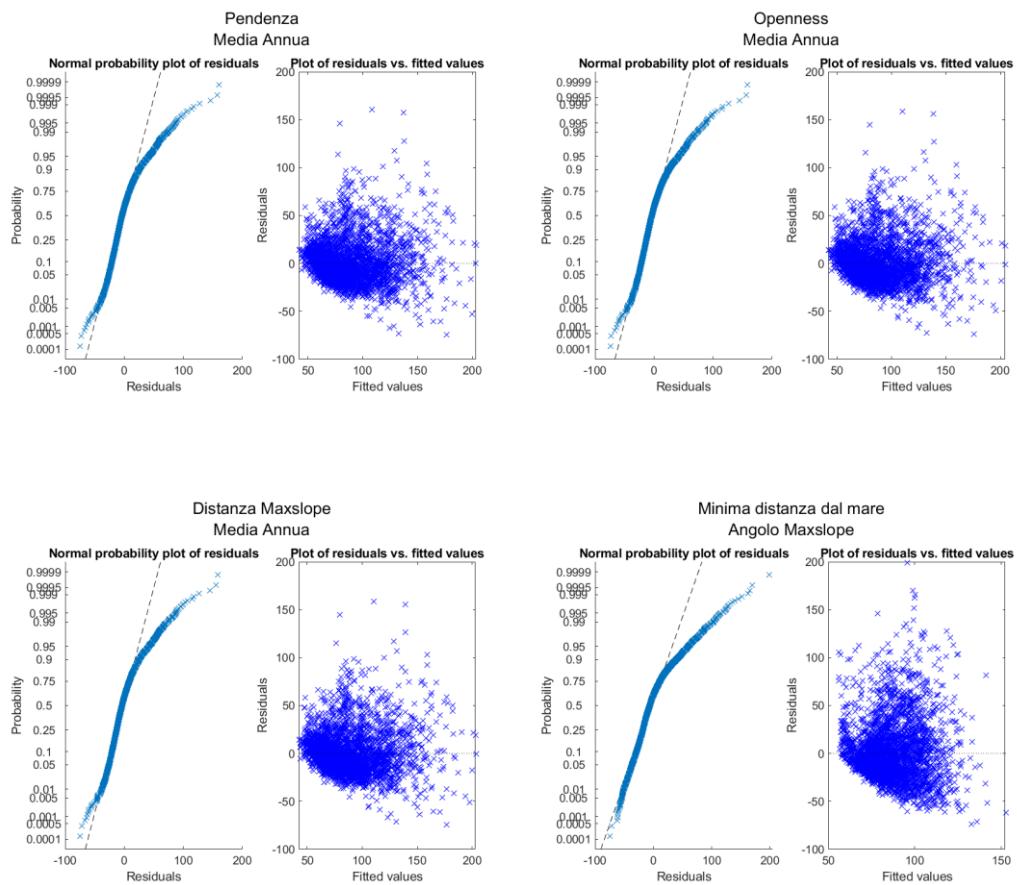
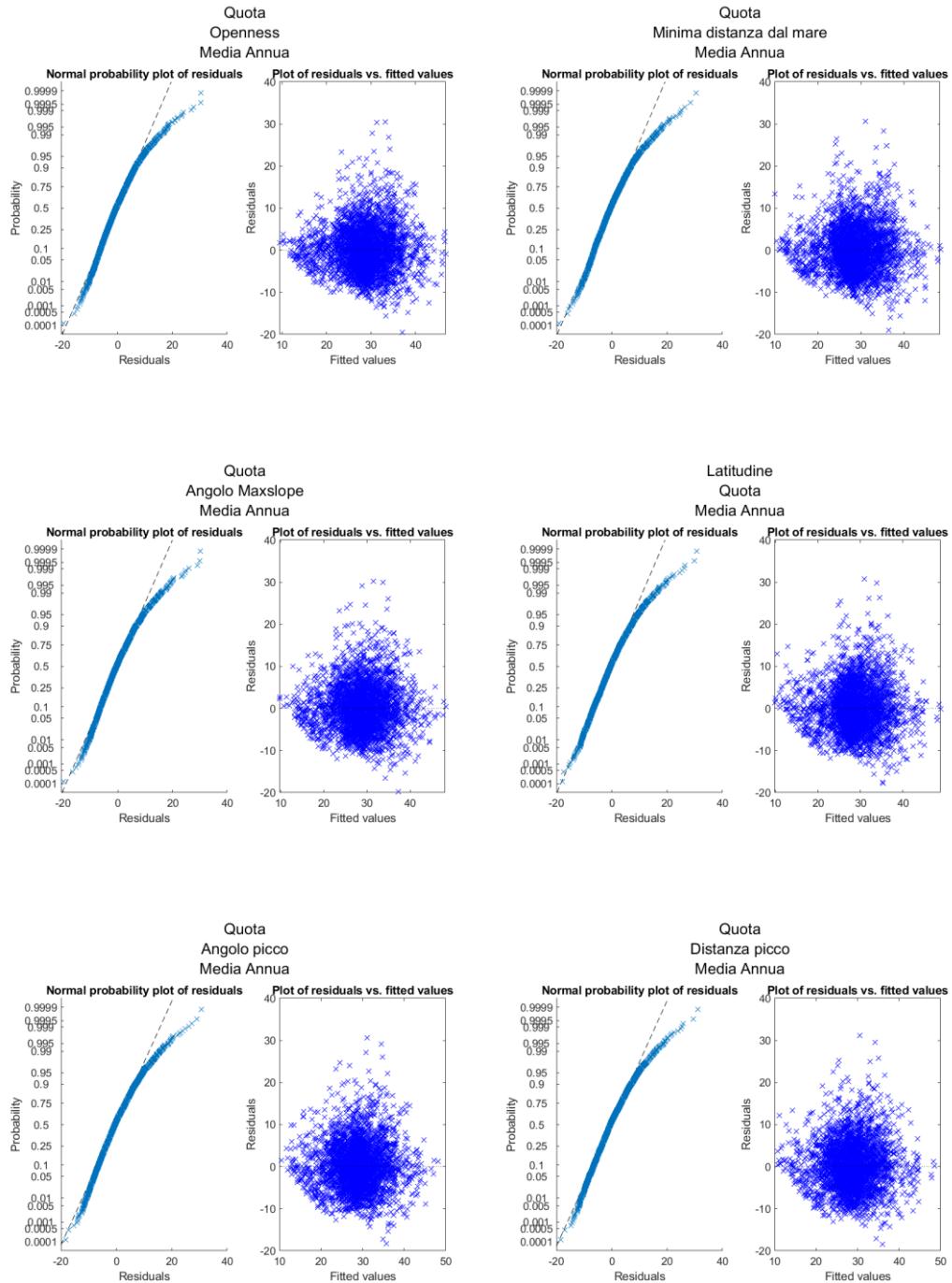


Tabella 6. Regressione I<sub>h</sub> con media degli estremi, 3 variabili, area Italia.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Quota	Openness	Media annua	0.491	0.490	-1.65E+01	-6.26E-03	2.34E+01	1.27E-02	1.31	1.41	1.17
Quota	Min Dist. dal Mare	Media annua	0.485	0.485	2.19E+01	-6.04E-03	-3.58E-02	1.14E-02	1.41	1.33	1.08
Quota	Angolo maxslope	Media annua	0.468	0.467	2.04E+01	-6.61E-03	-1.43E-01	1.27E-02	1.35	1.55	1.24
Latitudine	Quota	Media annua	0.461	0.460	3.94E+01	-4.13E-06	-7.71E-03	1.24E-02	1.16	1.09	1.20
Quota	Angolo picco	Media annua	0.447	0.446	2.08E+01	-7.17E-03	-1.18E-01	1.20E-02	1.44	1.61	1.21
Quota	Distanza picco	Media annua	0.444	0.443	2.14E+01	-8.14E-03	-1.13E-04	1.14E-02	1.10	1.02	1.08
Longitudine	Quota	Media annua	0.441	0.441	1.95E+01	1.54E-06	-7.86E-03	1.15E-02	1.06	1.12	1.09
Quota	Distanza maxslope	Media annua	0.440	0.440	2.05E+01	-7.92E-03	4.94E-05	1.15E-02	1.11	1.08	1.11
Min Dist. dal Mare	Openness	Media annua	0.433	0.433	-1.77E+01	-4.22E-02	2.47E+01	1.15E-02	1.38	1.56	1.16
Min Dist. dal Mare	Angolo maxslope	Media annua	0.422	0.422	2.12E+01	-4.72E-02	-1.69E-01	1.17E-02	1.27	1.55	1.25

Figura 8. Diagrammi diagnostici per regressione 1h con media degli estremi, 3 variabili, area Italia



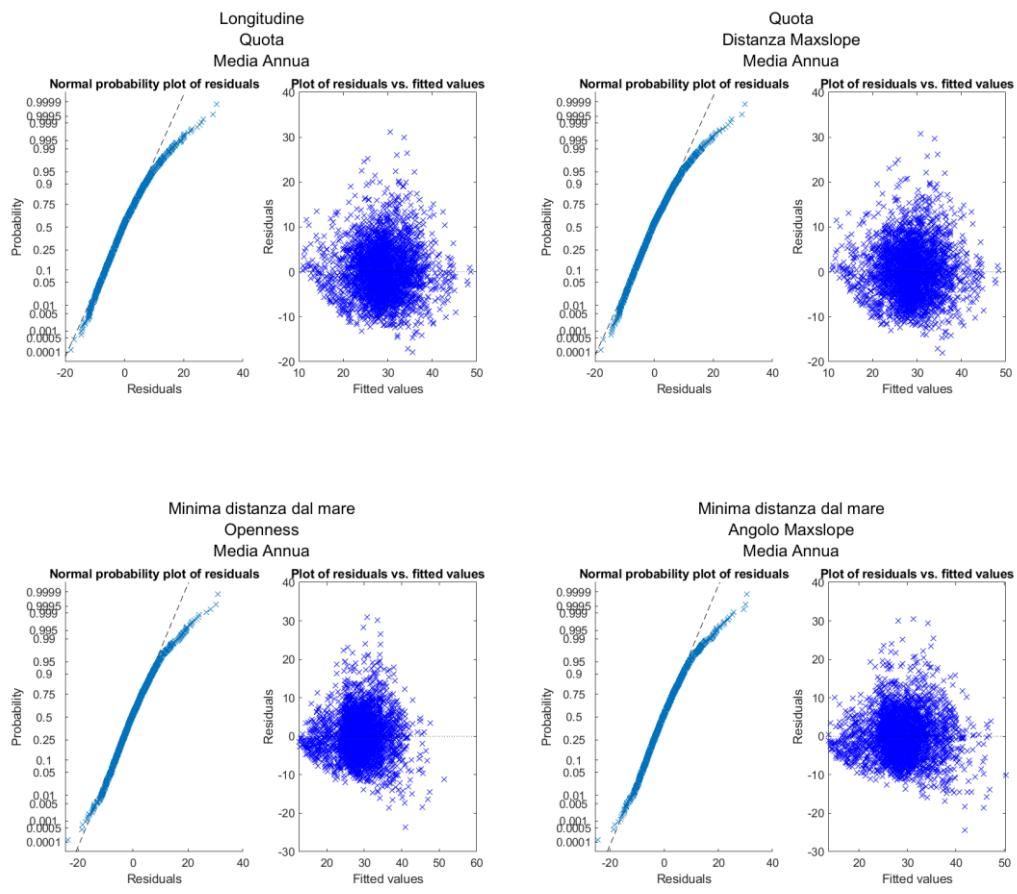
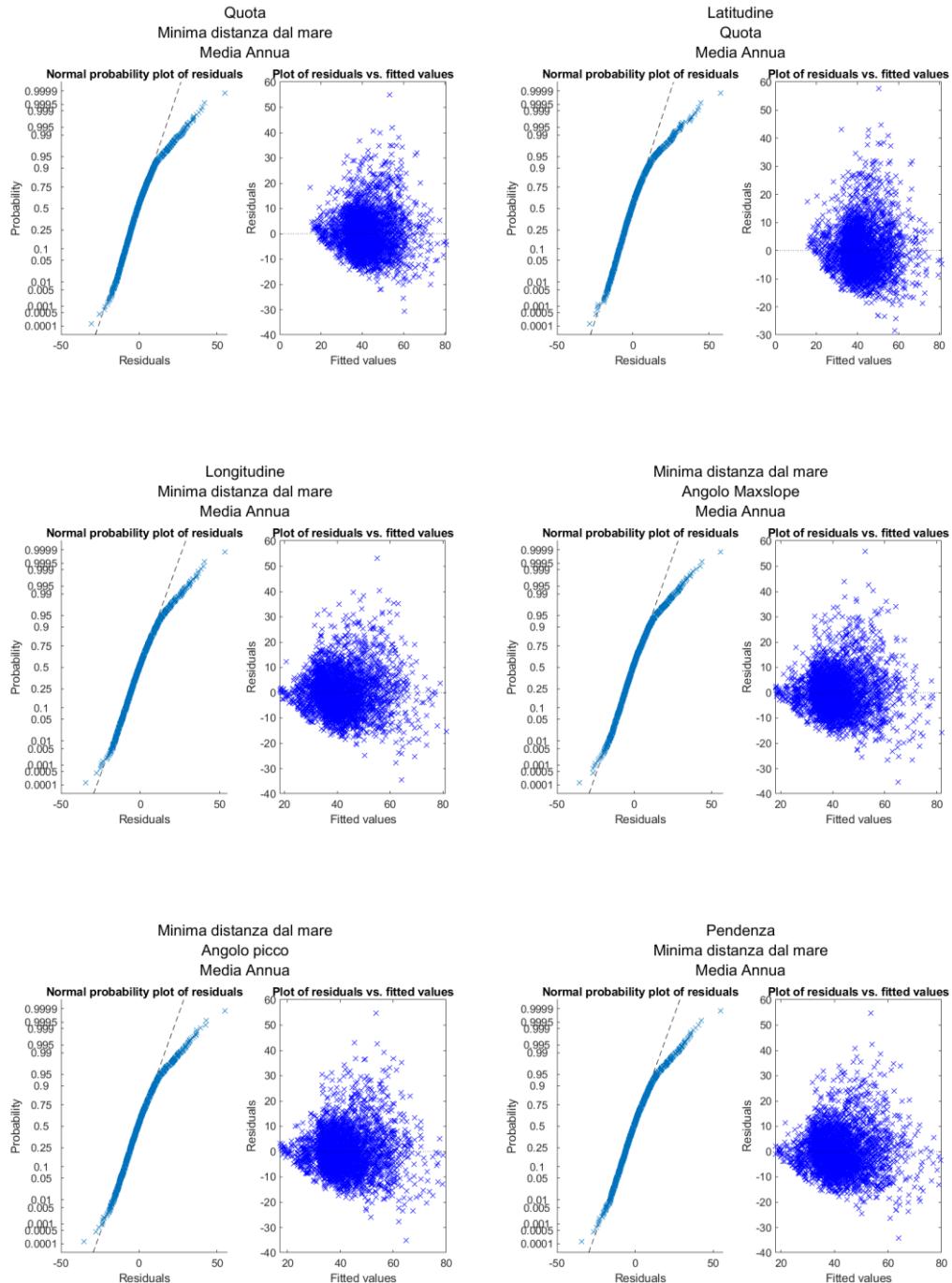


Tabella 7. Regressione 3h con media degli estremi, 3 variabili, area Italia.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Quota	Min Dist. dal Mare	Media annua	0.559	0.559	2.52E+01	-6.20E-03	-6.52E-02	2.21E-02	1.41	1.33	1.08
Latitudine	Quota	Media annua	0.530	0.530	5.83E+01	-7.78E-06	-9.23E-03	2.40E-02	1.16	1.09	1.20
Longitudine	Min Dist. dal Mare	Media annua	0.530	0.529	3.16E+01	-6.89E-06	-1.06E-01	2.01E-02	1.34	1.32	1.03
Min Dist. dal Mare	Angolo maxslope	Media annua	0.524	0.524	2.48E+01	-8.21E-02	-1.13E-01	2.17E-02	1.27	1.55	1.25
Min Dist. dal Mare	Angolo picco	Media annua	0.524	0.524	2.53E+01	-8.48E-02	-1.66E-01	2.16E-02	1.15	1.37	1.21
Pendenza	Min Dist. dal Mare	Media annua	0.521	0.521	2.55E+01	-8.62E-02	-8.96E-02	2.10E-02	1.11	1.04	1.09
Quota	Openness	Media annua	0.520	0.520	-1.38E+01	-8.04E-03	2.33E+01	2.34E-02	1.31	1.41	1.17
Min Dist. dal Mare	Distanza picco	Media annua	0.518	0.518	2.50E+01	-9.23E-02	6.78E-05	2.05E-02	1.02	1.01	1.02
Min Dist. dal Mare	Distanza maxslope	Media annua	0.518	0.518	2.49E+01	-9.12E-02	6.88E-05	2.06E-02	1.03	1.06	1.06
Quota	Angolo maxslope	Media annua	0.509	0.509	2.29E+01	-8.51E-03	-1.29E-01	2.33E-02	1.35	1.55	1.24

Figura 9. Diagrammi diagnostici per regressione 3h con media degli estremi, 3 variabili, area Italia



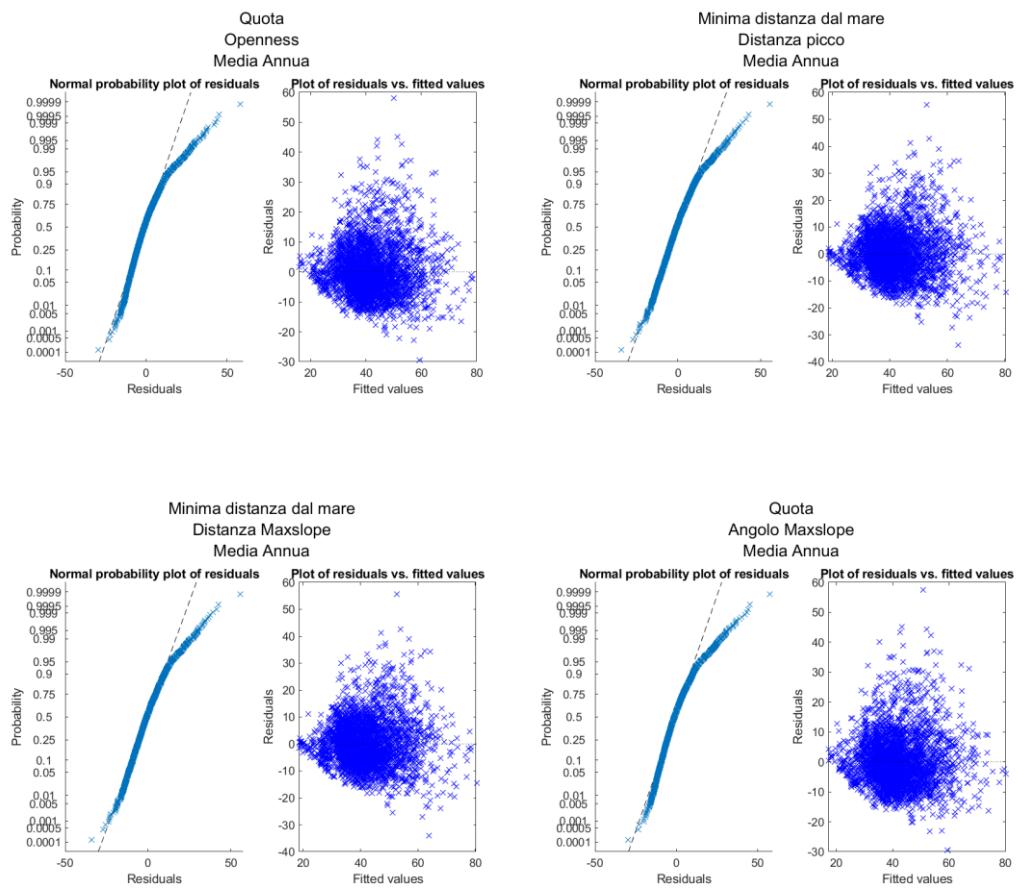
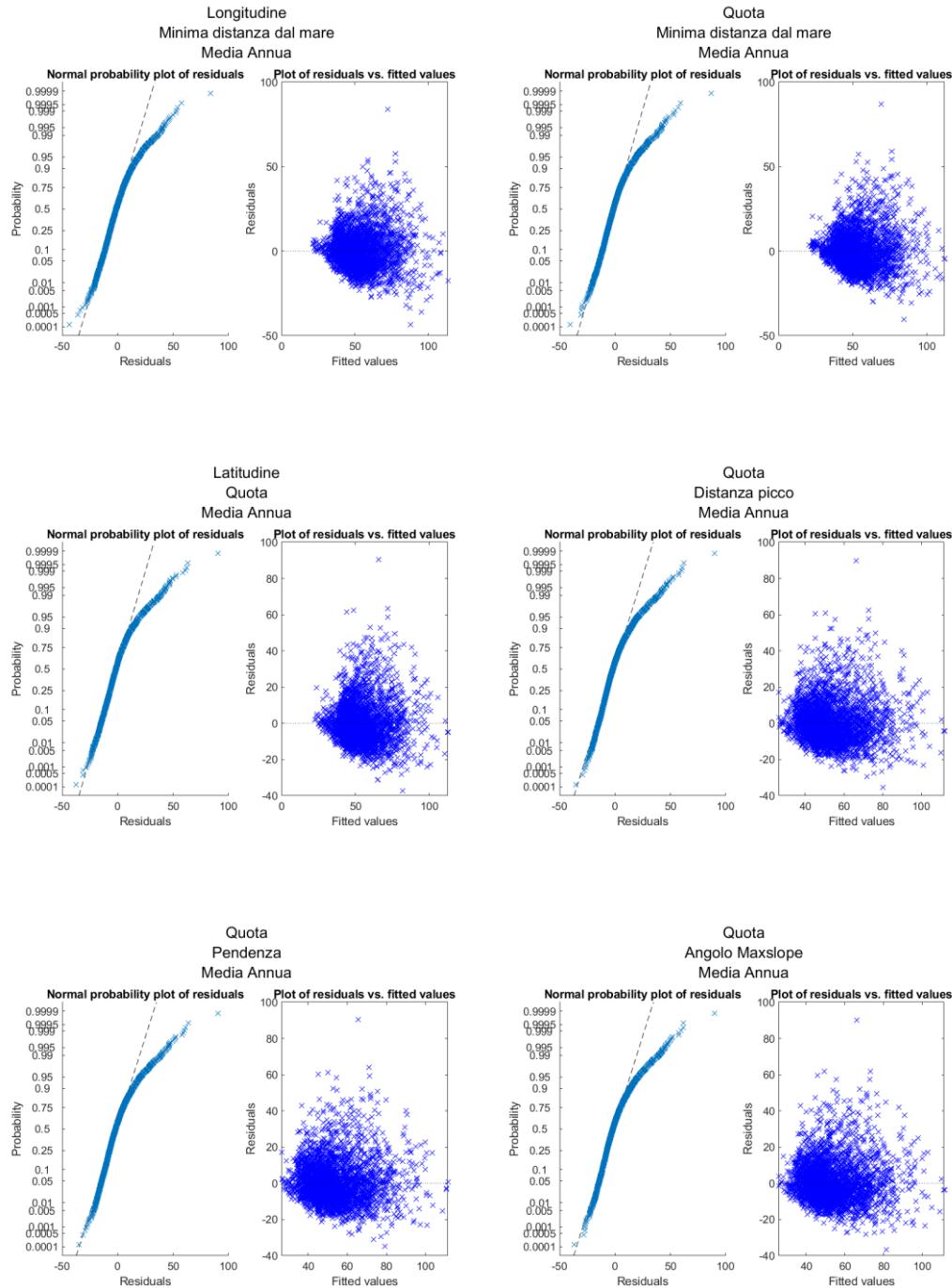


Tabella 8. Regressione 6h con media degli estremi, 3 variabili, area Italia.

	Variabili	$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	VIF 1	VIF 2	VIF 3	
Longitudine	Min Dist. dal Mare	Media annua	0.594	0.594	3.44E+01	-9.96E-06	-1.25E-01	3.14E-02	1.34	1.32	1.03
Quota	Min Dist. dal Mare	Media annua	0.591	0.591	2.52E+01	-4.26E-03	-8.58E-02	3.31E-02	1.41	1.33	1.08
Latitudine	Quota	Media annua	0.564	0.564	6.79E+01	-1.01E-05	-8.26E-03	3.56E-02	1.16	1.09	1.20
Quota	Distanza picco	Media annua	0.541	0.540	2.35E+01	-9.17E-03	-1.72E-04	3.31E-02	1.10	1.02	1.08
Quota	Pendenza	Media annua	0.540	0.540	2.25E+01	-9.57E-03	8.08E-02	3.29E-02	1.28	1.29	1.12
Quota	Angolo maxslope	Media annua	0.540	0.540	2.24E+01	-8.27E-03	-7.07E-02	3.38E-02	1.35	1.55	1.24
Latitudine	Openness	Media annua	0.530	0.530	2.20E+01	-9.74E-06	2.74E+01	3.50E-02	1.21	1.23	1.24
Latitudine	Angolo maxslope	Media annua	0.528	0.527	6.88E+01	-1.06E-05	-1.96E-01	3.54E-02	1.17	1.27	1.33
Latitudine	Angolo picco	Media annua	0.525	0.524	7.23E+01	-1.12E-05	-2.71E-01	3.52E-02	1.15	1.21	1.32
Latitudine	Pendenza	Media annua	0.519	0.518	7.48E+01	-1.18E-05	-1.24E-01	3.41E-02	1.14	1.08	1.23

Figura 10. Diagrammi diagnostici per regressione 6h con media degli estremi, 3 variabili, area Italia



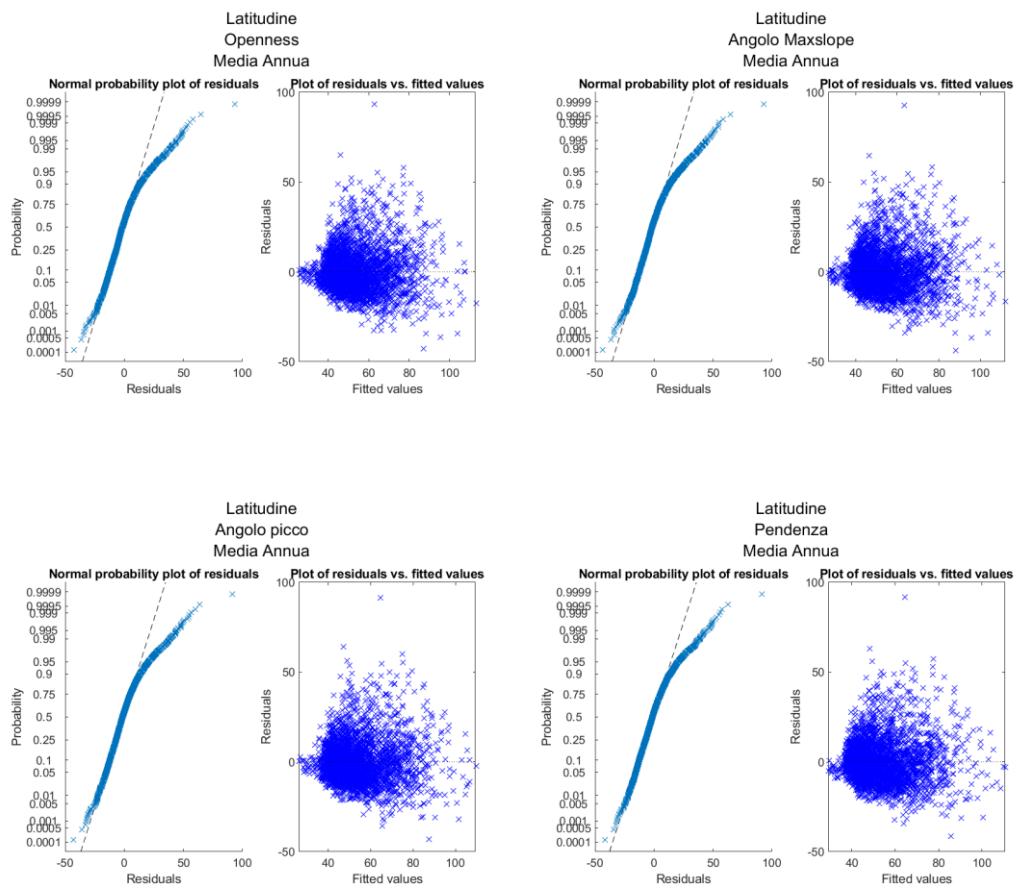
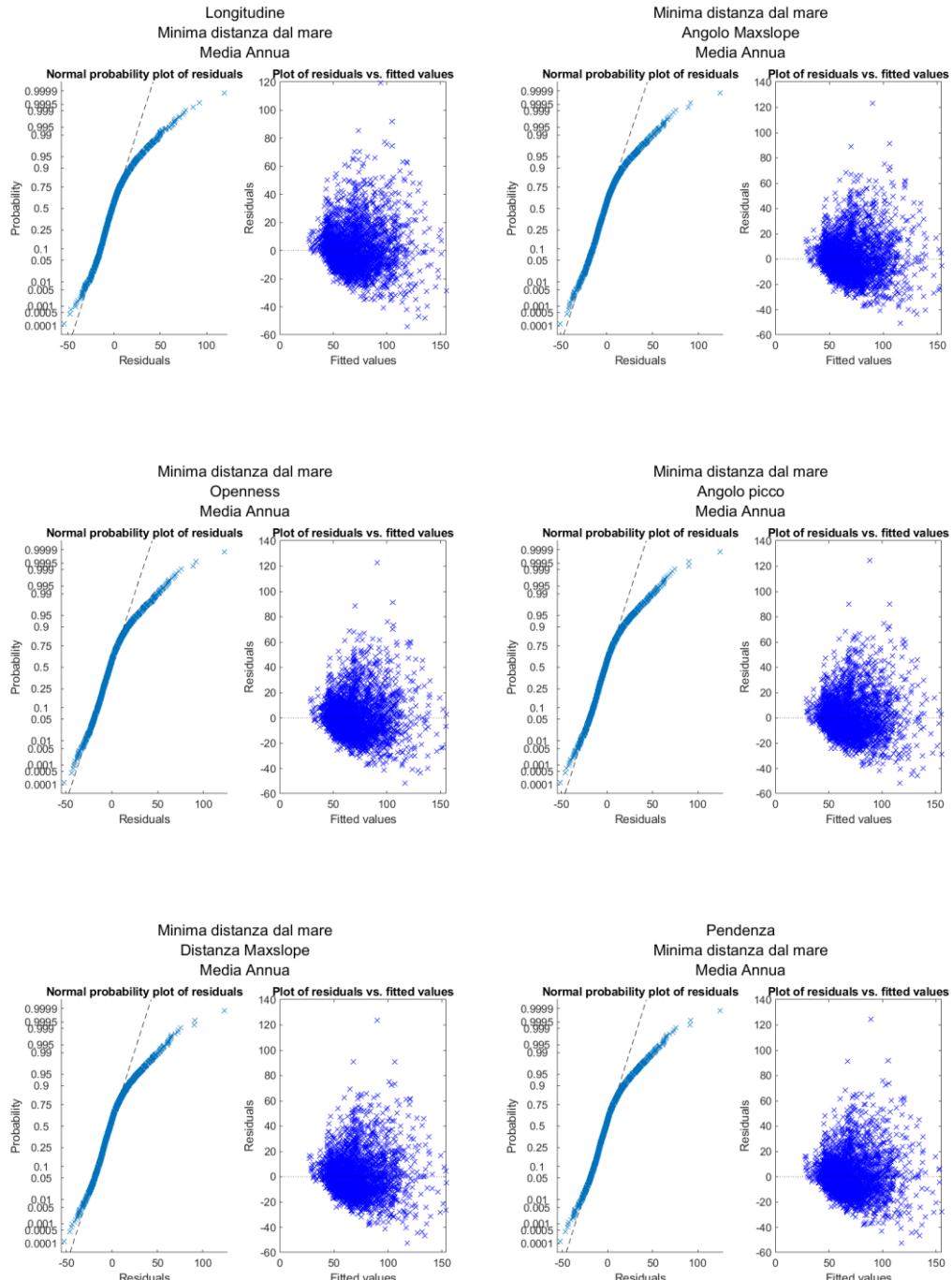


Tabella 9. Regressione 12h con media degli estremi, 3 variabili, area Italia.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Longitudine	Min Dist. dal Mare	Media annua	0.613	0.613	3.64E+01	-1.40E-05	-1.31E-01	4.70E-02	1.34	1.32	1.03
Min Dist. dal Mare	Angolo maxslope	Media annua	0.605	0.604	2.44E+01	-1.17E-01	1.77E-01	4.58E-02	1.27	1.55	1.25
Min Dist. dal Mare	Openness	Media annua	0.605	0.604	5.95E+01	-1.19E-01	-2.24E+01	4.63E-02	1.38	1.56	1.16
Min Dist. dal Mare	Angolo picco	Media annua	0.603	0.603	2.36E+01	-1.10E-01	1.98E-01	4.65E-02	1.15	1.37	1.21
Min Dist. dal Mare	Distanza maxslope	Media annua	0.601	0.601	2.45E+01	-1.03E-01	-1.48E-04	4.75E-02	1.03	1.06	1.06
Pendenza	Min Dist. dal Mare	Media annua	0.601	0.601	2.35E+01	7.03E-02	-1.03E-01	4.74E-02	1.11	1.04	1.09
Latitudine	Quota	Media annua	0.582	0.582	6.99E+01	-1.09E-05	-5.57E-03	5.08E-02	1.16	1.09	1.20
Latitudine	Openness	Media annua	0.571	0.571	5.99E+01	-1.15E-05	7.48E+00	4.97E-02	1.21	1.23	1.24
Quota	Pendenza	Media annua	0.569	0.569	2.04E+01	-7.32E-03	1.29E-01	4.76E-02	1.28	1.29	1.12
Quota	Angolo picco	Media annua	0.568	0.568	2.06E+01	-7.44E-03	1.61E-01	4.73E-02	1.44	1.61	1.21

Figura 11. Diagrammi diagnostici per regressione 12h con media degli estremi, 3 variabili, area Italia



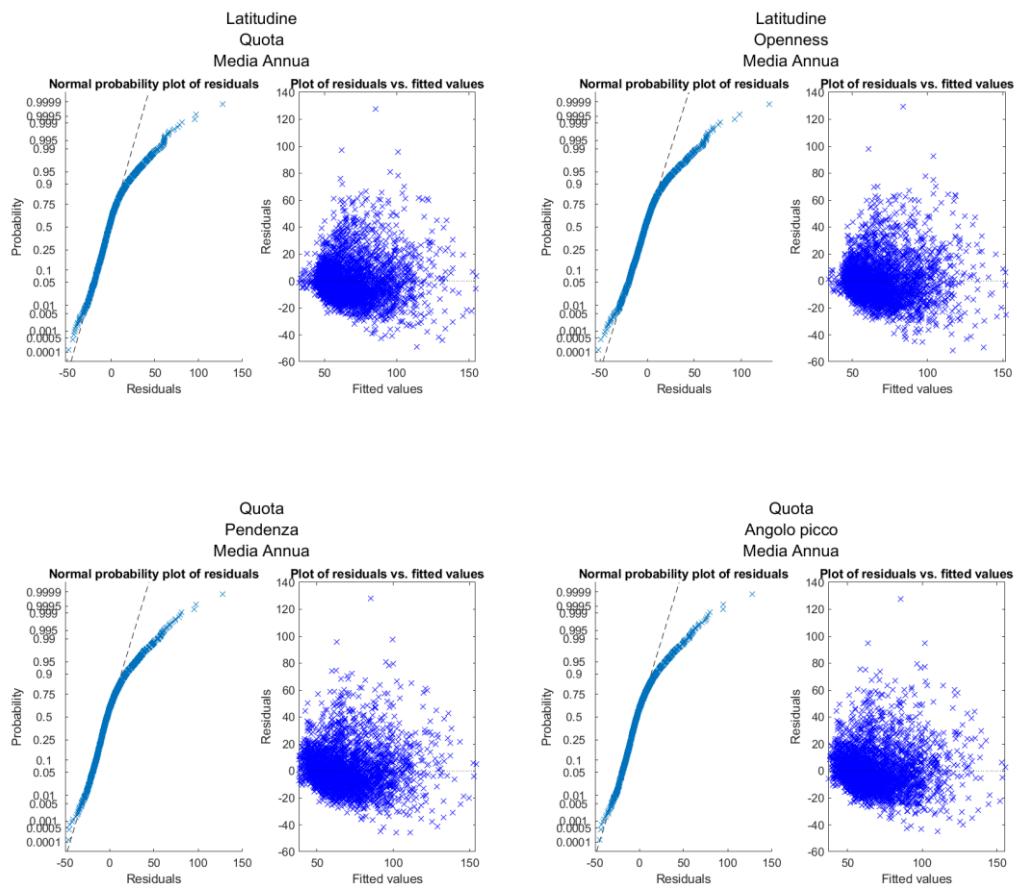
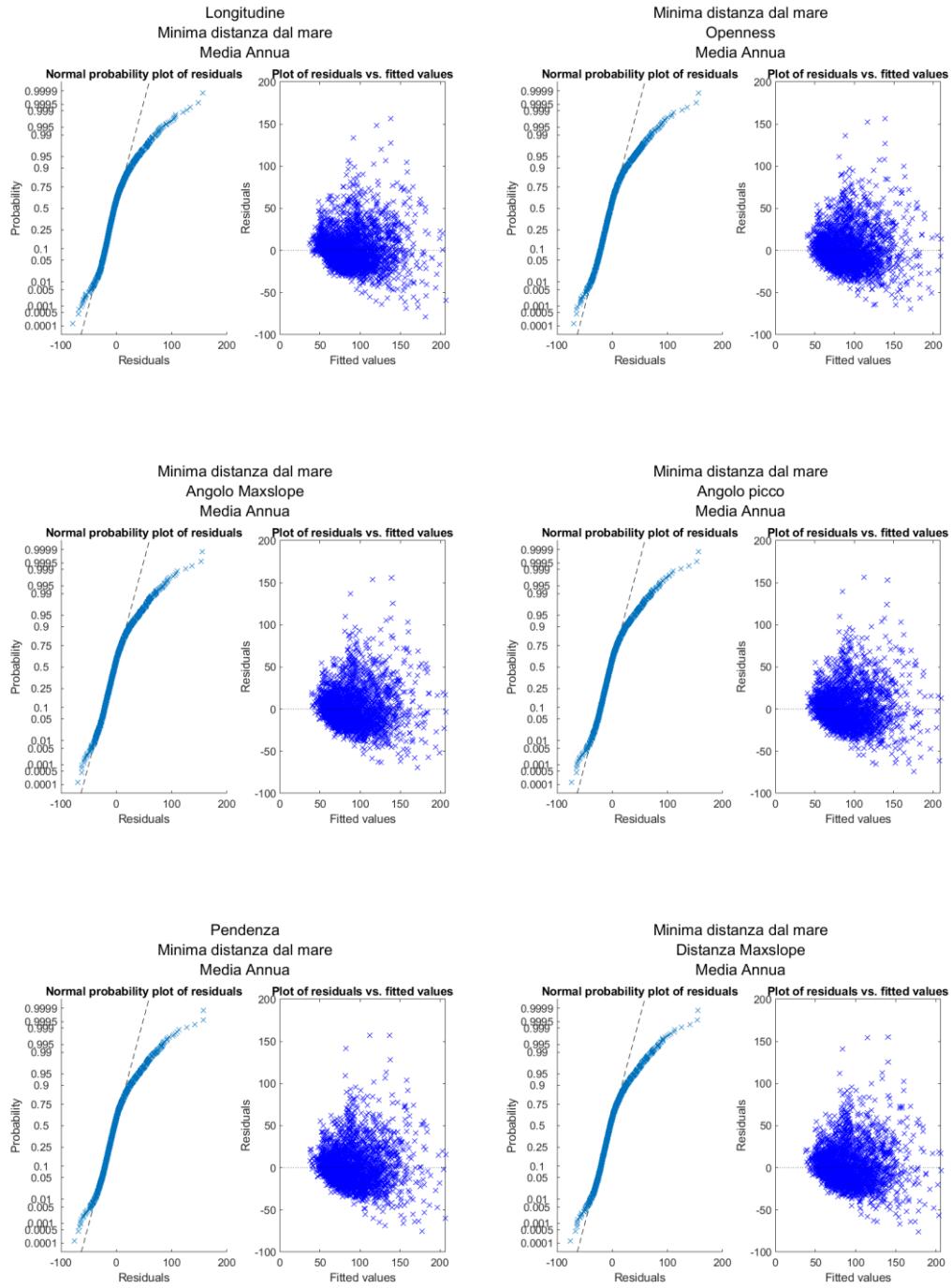
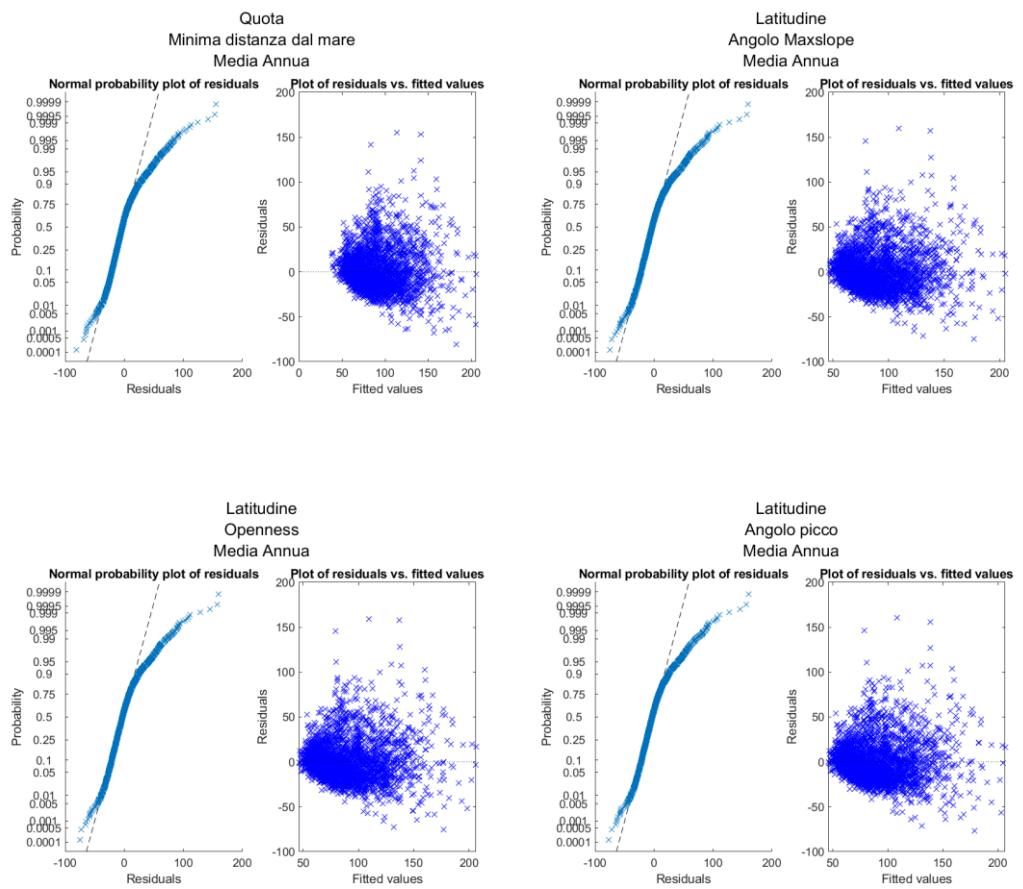


Tabella 10. Regressione 24h con media degli estremi, 3 variabili, area Italia.

	Variabili	R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3		
Longitudine	Min Dist. dal Mare	Media annua	0.602	0.602	3.94E+01	-2.02E-05	-1.20E-01	6.55E-02	1.34	1.32	1.03	
Min Dist. dal Mare	Openness	Media annua	0.598	0.598	9.93E+01	-1.16E-01	-	4.87E+01	6.34E-02	1.38	1.56	1.16
Min Dist. dal Mare	Angolo maxslope	Media annua	0.598	0.598	2.27E+01	-1.10E-01	3.77E-01	6.25E-02	1.27	1.55	1.25	
Min Dist. dal Mare	Angolo picco	Media annua	0.594	0.594	2.11E+01	-9.62E-02	4.39E-01	6.37E-02	1.15	1.37	1.21	
Pendenza	Min Dist. dal Mare	Media annua	0.591	0.590	2.06E+01	1.93E-01	-8.28E-02	6.55E-02	1.11	1.04	1.09	
Min Dist. dal Mare	Distanza maxslope	Media annua	0.589	0.589	2.28E+01	-8.05E-02	-2.88E-04	6.60E-02	1.03	1.06	1.06	
Quota	Min Dist. dal Mare	Media annua	0.589	0.589	2.10E+01	2.50E-03	-8.85E-02	6.60E-02	1.41	1.33	1.08	
Latitudine	Angolo maxslope	Media annua	0.583	0.583	7.01E+01	-1.15E-05	1.69E-01	6.62E-02	1.17	1.27	1.33	
Latitudine	Openness	Media annua	0.583	0.583	1.04E+02	-1.19E-05	-	2.02E+01	6.68E-02	1.21	1.23	1.24
Latitudine	Angolo picco	Media annua	0.582	0.582	6.68E+01	-1.09E-05	2.07E-01	6.66E-02	1.15	1.21	1.32	

Figura 12. Diagrammi diagnostici per regressione 24h con media degli estremi, 3 variabili, area Italia





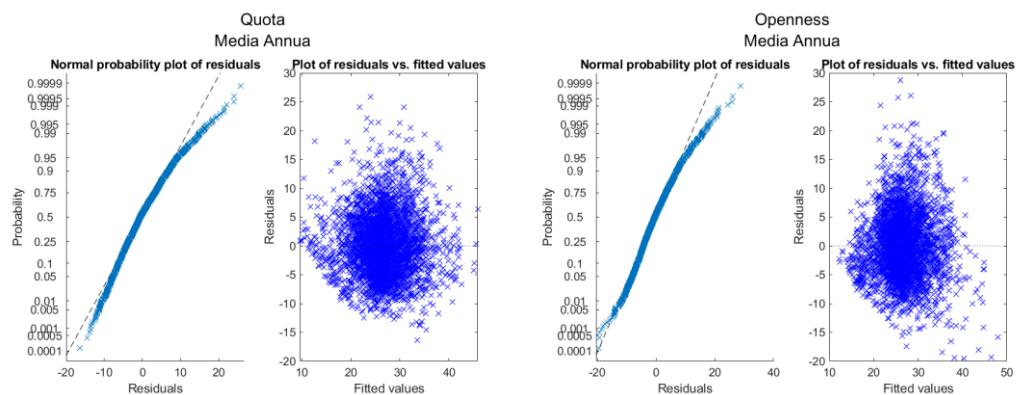
## **Regressioni con la mediana delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h**

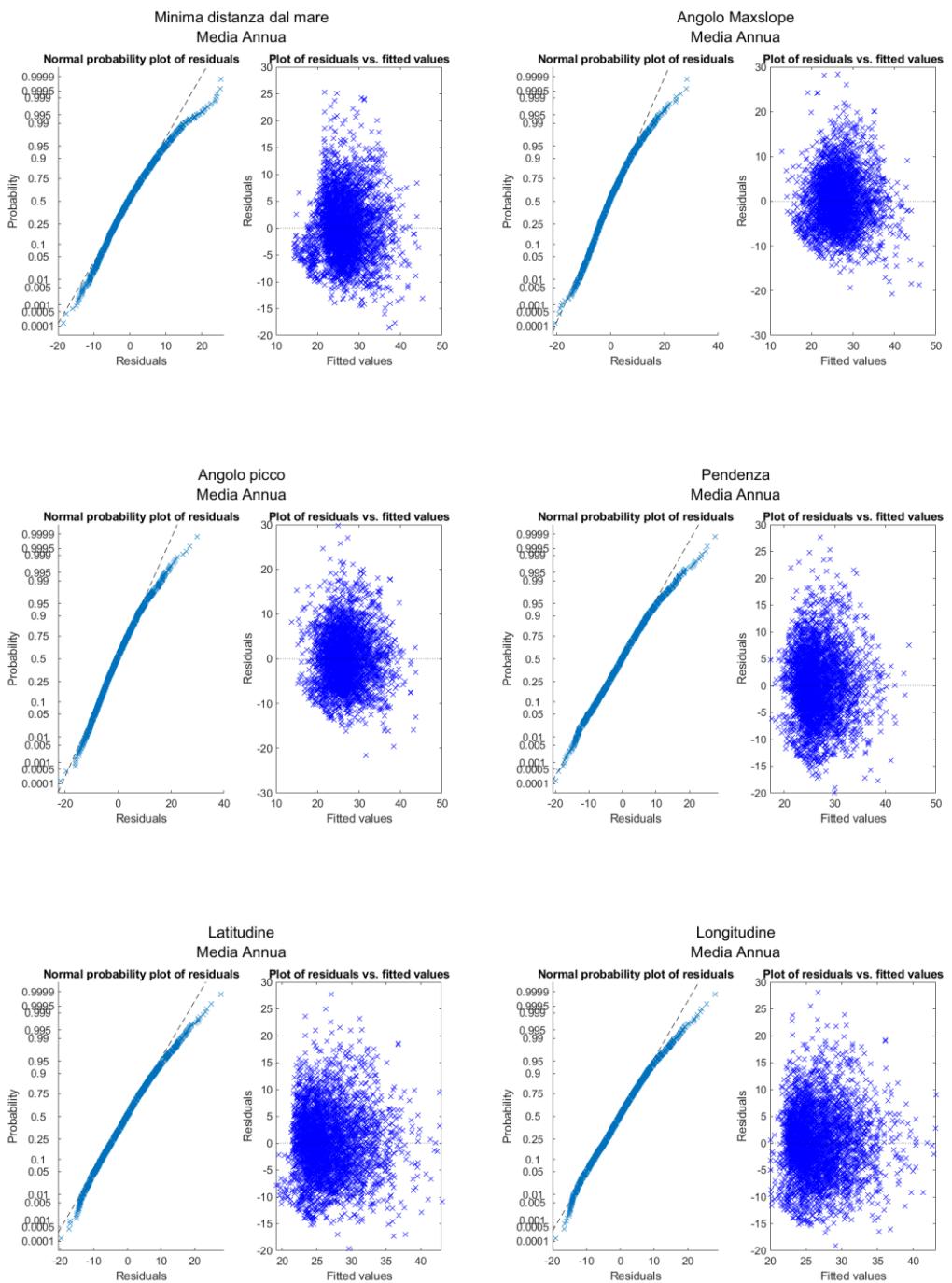
Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la mediana degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l'area Italia. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 11. Regressione 1h con mediana degli estremi, 2 variabili, area Italia.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Quota	Media Annua	0.443	0.443	1.87E+01	-7.55E-03	1.12E-02
Openness	Media Annua	0.379	0.379	-4.01E+01	3.65E+01	1.16E-02
Minima distanza dal mare	Media Annua	0.369	0.369	1.97E+01	-5.51E-02	9.59E-03
Angolo Maxslope	Media Annua	0.349	0.348	1.72E+01	-2.67E-01	1.20E-02
Angolo picco	Media Annua	0.317	0.317	1.81E+01	-3.65E-01	1.14E-02
Pendenza	Media Annua	0.252	0.251	1.80E+01	-1.60E-01	9.67E-03
Latitudine	Media Annua	0.247	0.246	3.95E+01	-4.86E-06	9.91E-03
Longitudine	Media Annua	0.229	0.229	1.42E+01	4.00E-06	9.01E-03
Distanza Maxslope	Media Annua	0.225	0.225	1.65E+01	1.81E-04	9.06E-03
Latitudine	Minima distanza dal mare	0.164	0.164	-4.22E+00	7.25E-06	-6.95E-02

*Figura 13. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 2 variabili, area Italia*





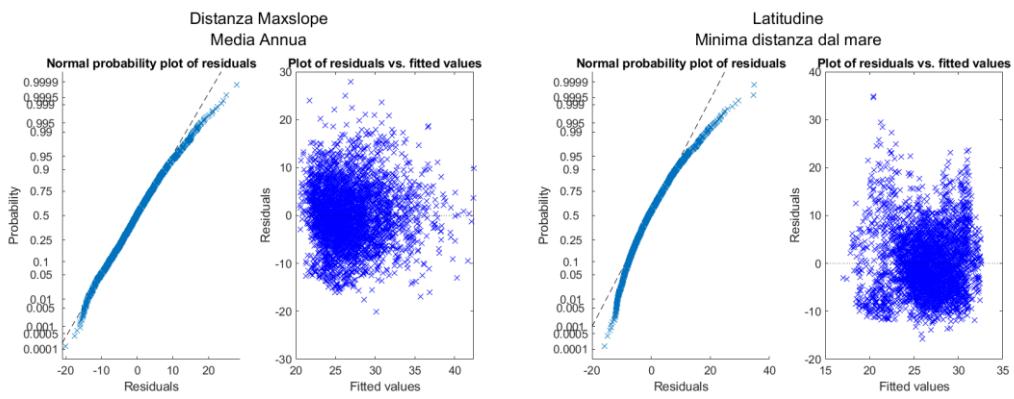
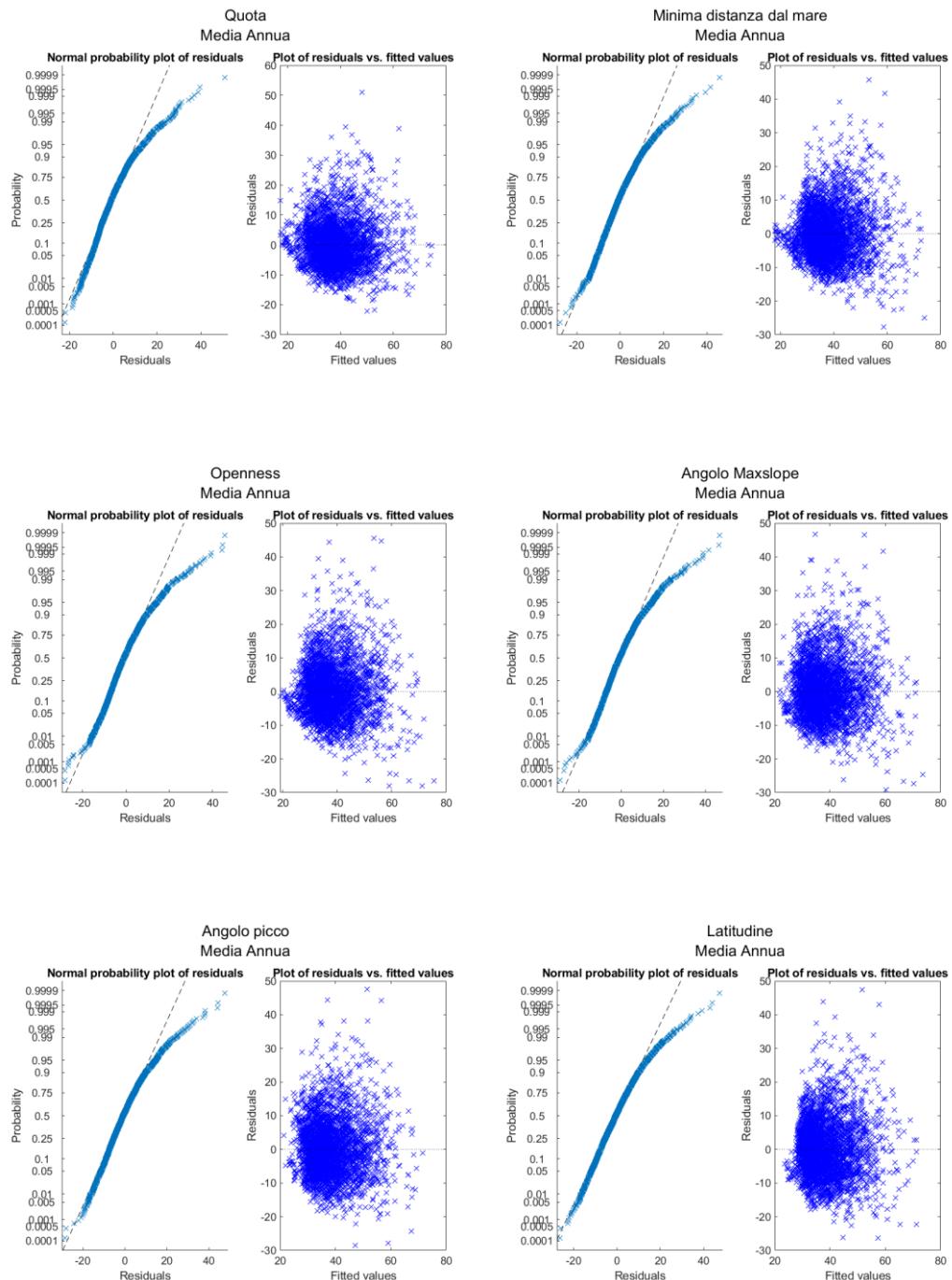


Tabella 12. Regressione 3h con mediana degli estremi, 2 variabili, area Italia.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Quota	Media Annual	0.528	0.528	2.04E+01	-8.51E-03	2.08E-02
Minima distanza dal mare	Media Annual	0.525	0.525	2.21E+01	-7.46E-02	1.92E-02
Openness	Media Annual	0.476	0.476	-3.97E+01	3.73E+01	2.10E-02
Angolo Maxslope	Media Annual	0.460	0.459	1.89E+01	-2.66E-01	2.13E-02
Angolo picco	Media Annual	0.443	0.442	1.97E+01	-3.50E-01	2.05E-02
Latitudine	Media Annual	0.437	0.437	5.39E+01	-7.68E-06	2.00E-02
Pendenza	Media Annual	0.416	0.416	1.96E+01	-1.51E-01	1.89E-02
Longitudine	Media Annual	0.410	0.409	1.55E+01	4.44E-06	1.84E-02
Distanza Maxslope	Media Annual	0.406	0.406	1.81E+01	1.77E-04	1.84E-02
Latitudine	Minima distanza dal mare	0.135	0.135	-1.38E+01	1.19E-05	-9.50E-02

Figura 14. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 2 variabili, area Italia



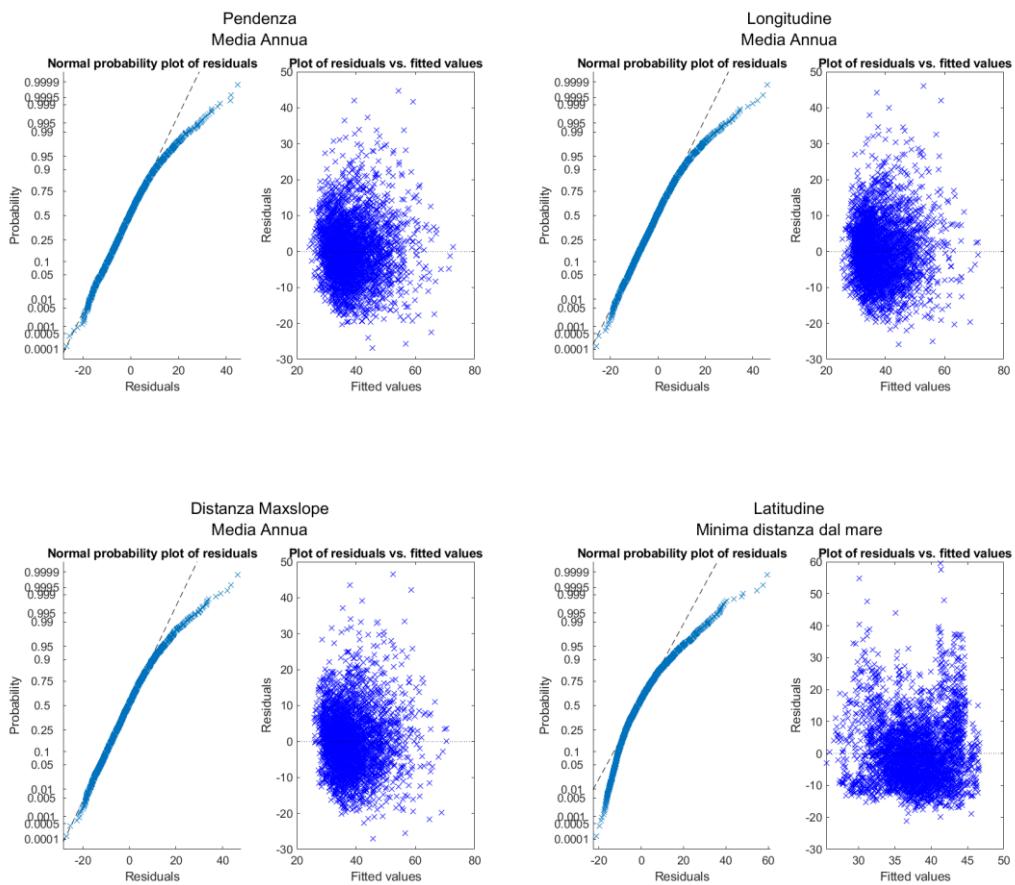
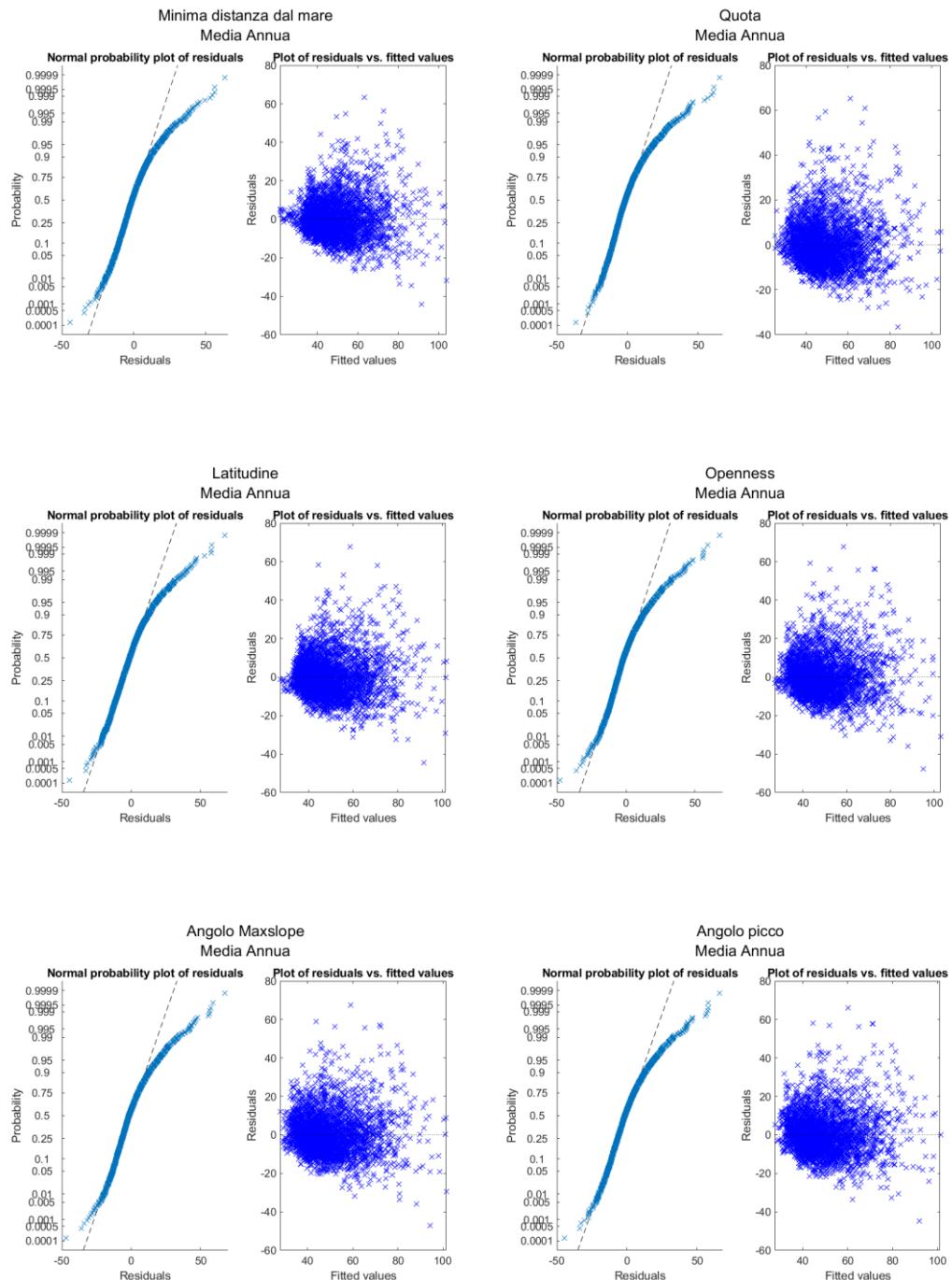


Tabella 13. Regressione 6h con mediana degli estremi, 2 variabili, area Italia.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annua	0.595	0.595	2.16E+01	-8.14E-02	3.02E-02
Quota	Media Annua	0.570	0.570	1.96E+01	-7.45E-03	3.13E-02
Latitudine	Media Annua	0.547	0.547	6.07E+01	-9.35E-06	3.13E-02
Openness	Media Annua	0.541	0.541	-2.48E+01	2.74E+01	3.11E-02
Angolo Maxslope	Media Annua	0.536	0.536	1.82E+01	-1.90E-01	3.12E-02
Angolo picco	Media Annua	0.530	0.530	1.88E+01	-2.31E-01	3.05E-02
Pendenza	Media Annua	0.524	0.524	1.88E+01	-1.01E-01	2.95E-02
Longitudine	Media Annua	0.524	0.523	1.55E+01	3.56E-06	2.92E-02
Distanza Maxslope	Media Annua	0.521	0.521	1.80E+01	8.63E-05	2.90E-02
Minima distanza dal mare	Angolo Maxslope	0.136	0.136	4.83E+01	-1.02E-01	5.09E-01

Figura 15. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 2 variabili, area Italia



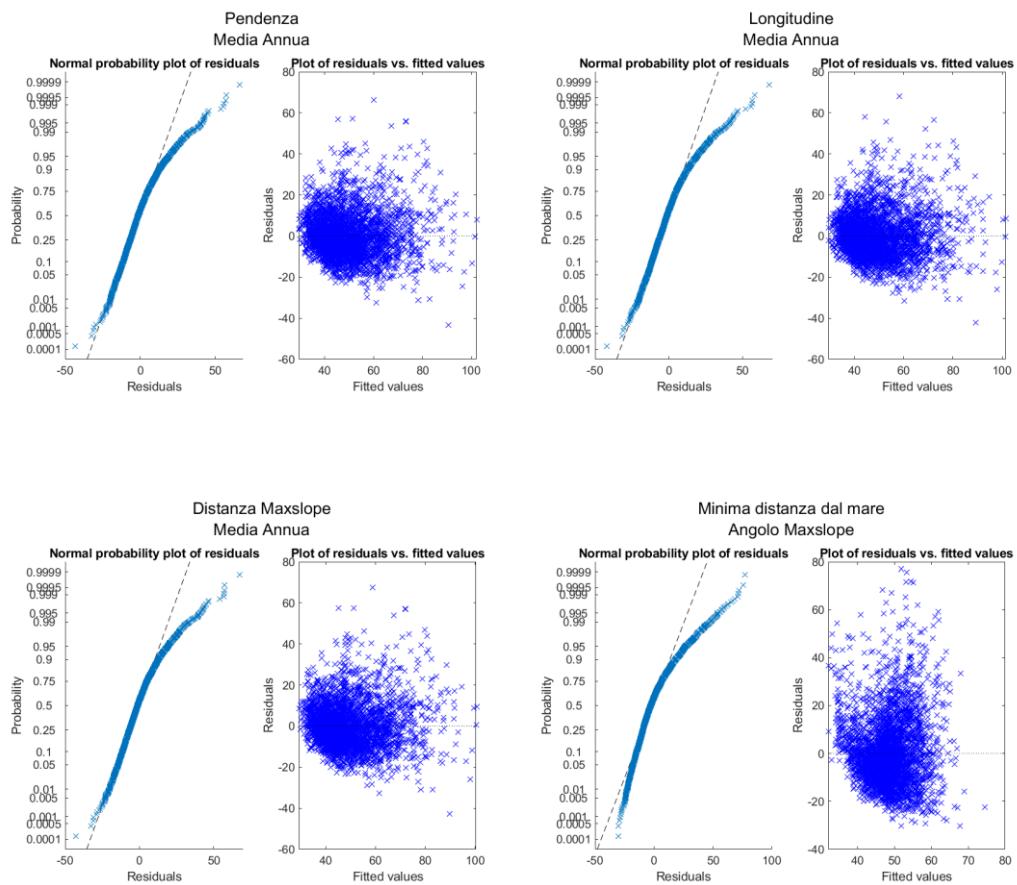
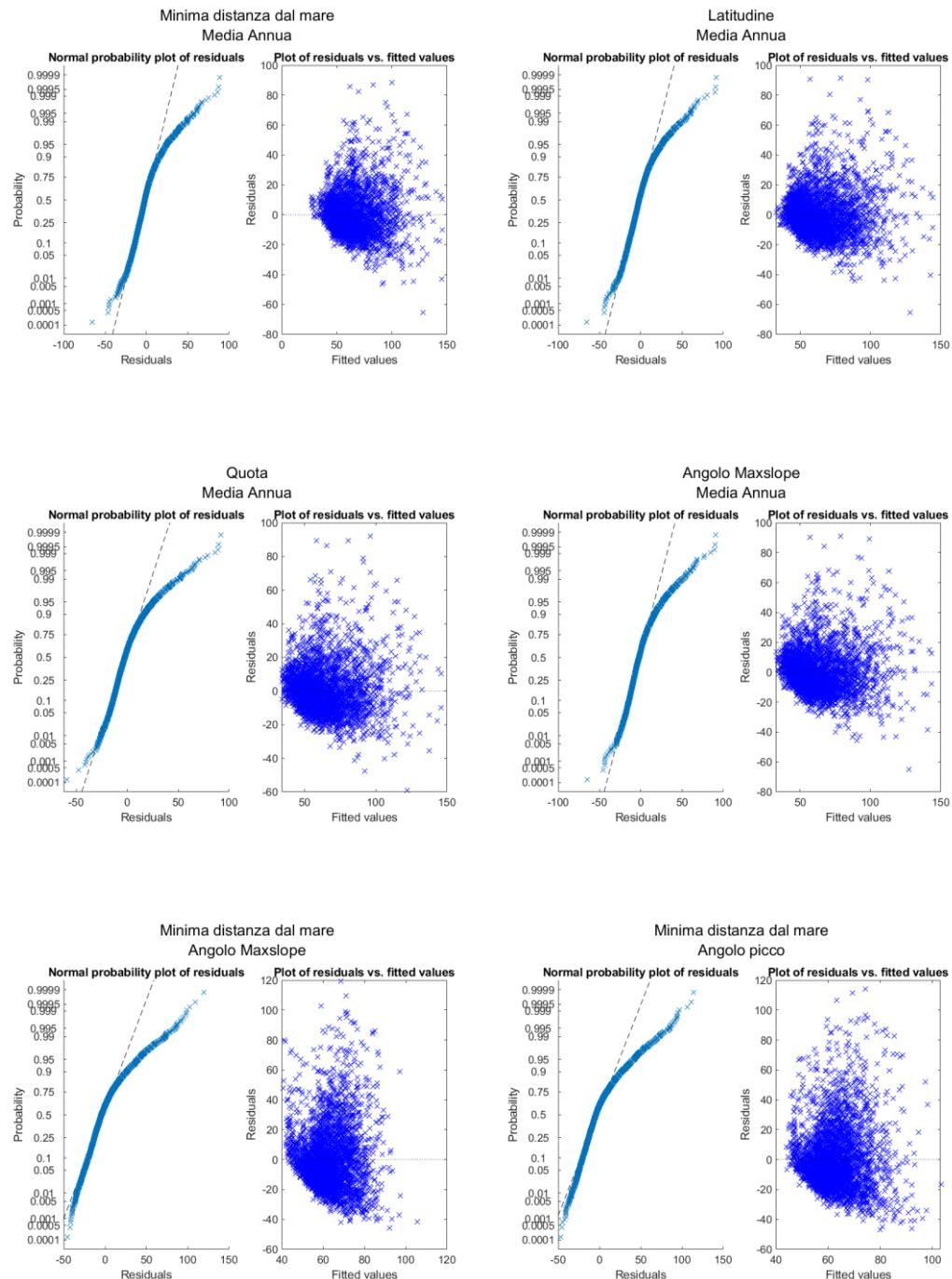


Tabella 14. Regressione 12h con mediana degli estremi, 2 variabili, area Italia.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annua	0.620	0.620	1.92E+01	-7.96E-02	4.61E-02
Latitudine	Media Annua	0.599	0.599	5.75E+01	-9.15E-06	4.71E-02
Quota	Media Annua	0.599	0.598	1.69E+01	-5.33E-03	4.65E-02
Angolo Maxslope	Media Annua	0.588	0.588	1.60E+01	-7.05E-02	4.56E-02
Minima distanza dal mare	Angolo Maxslope	0.158	0.157	5.91E+01	-1.22E-01	8.92E-01
Minima distanza dal mare	Angolo picco	0.132	0.131	5.69E+01	-9.49E-02	1.23E+00
Minima distanza dal mare	Openness	0.115	0.114	2.20E+02	-1.22E-01	-1.01E+02
Latitudine	Angolo Maxslope	0.102	0.102	2.35E+01	6.76E-06	5.79E-01
Latitudine	Angolo picco	0.101	0.101	1.36E+01	8.56E-06	8.95E-01
Pendenza	Angolo Maxslope	0.101	0.101	5.42E+01	2.09E-01	5.53E-01

Figura 16. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 2 variabili, area Italia



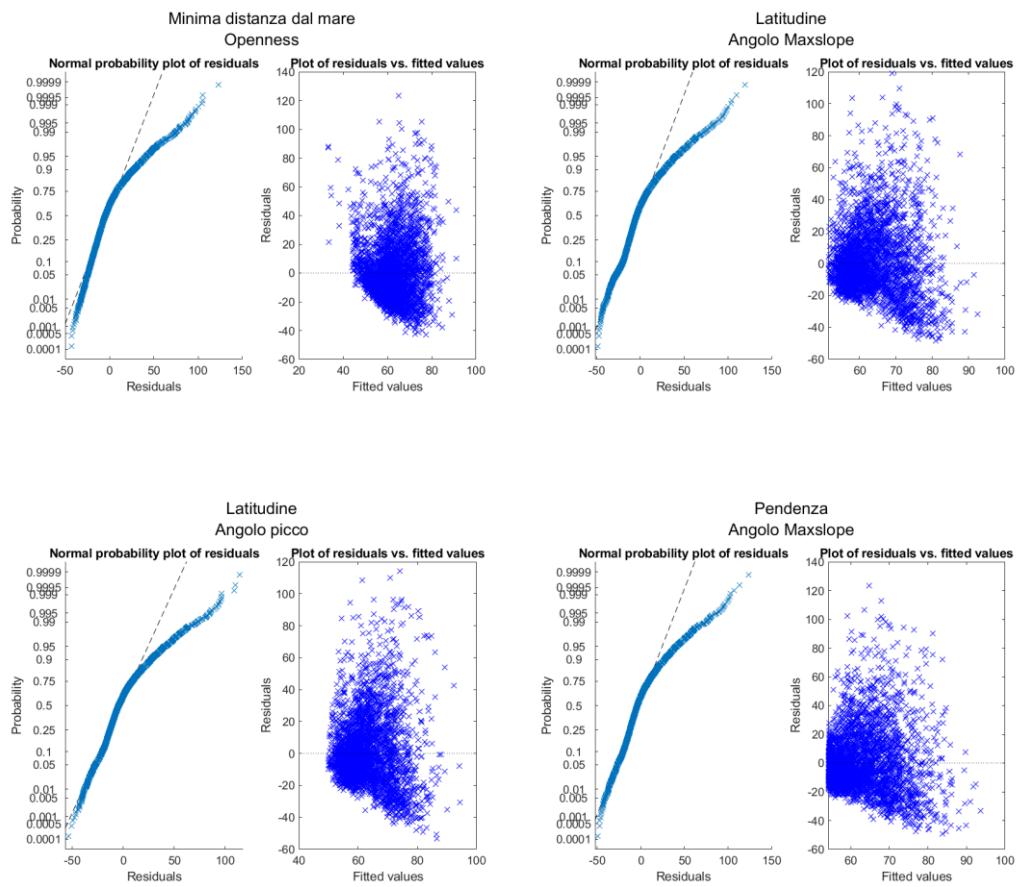
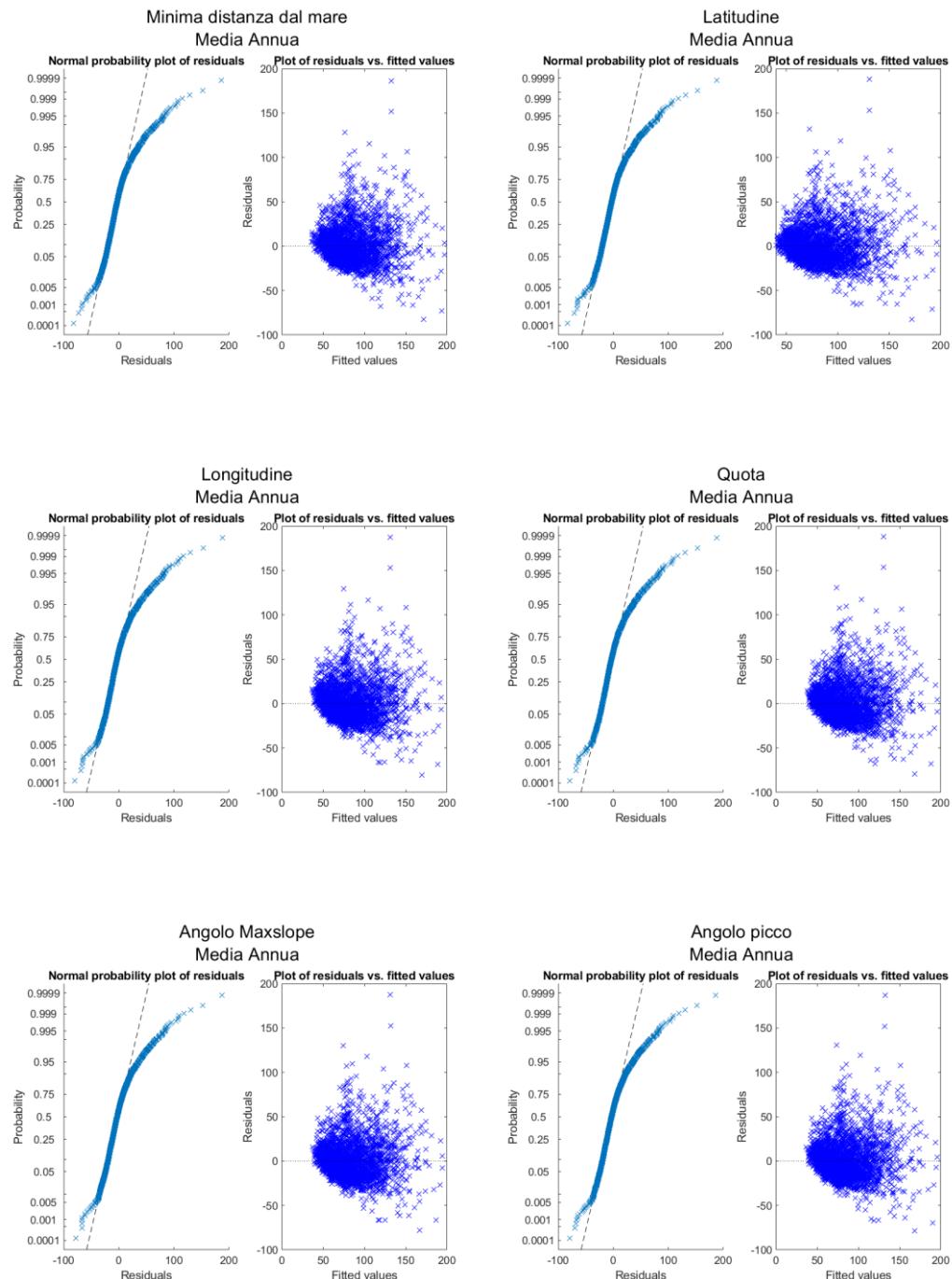


Tabella 15. Regressione 24h con mediana degli estremi, 2 variabili, area Italia.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annuia	0.613	0.613	1.59E+01	-6.04E-02	6.47E-02
Latitudine	Media Annuia	0.608	0.607	4.82E+01	-7.65E-06	6.57E-02
Longitudine	Media Annuia	0.605	0.605	1.86E+01	-5.98E-06	6.31E-02
Quota	Media Annuia	0.604	0.604	1.39E+01	-2.25E-03	6.44E-02
Angolo Maxslope	Media Annuia	0.604	0.604	1.38E+01	1.03E-01	6.24E-02
Angolo picco	Media Annuia	0.604	0.604	1.34E+01	1.54E-01	6.25E-02
Openness	Media Annuia	0.604	0.604	2.99E+01	-1.03E+01	6.28E-02
Pendenza	Media Annuia	0.604	0.604	1.34E+01	8.99E-02	6.31E-02
Minima distanza dal mare	Angolo Maxslope	0.172	0.172	7.15E+01	-1.28E-01	1.34E+00
Pendenza	Angolo Maxslope	0.144	0.143	6.58E+01	3.17E-01	9.45E-01

Figura 17. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 2 variabili, area Italia



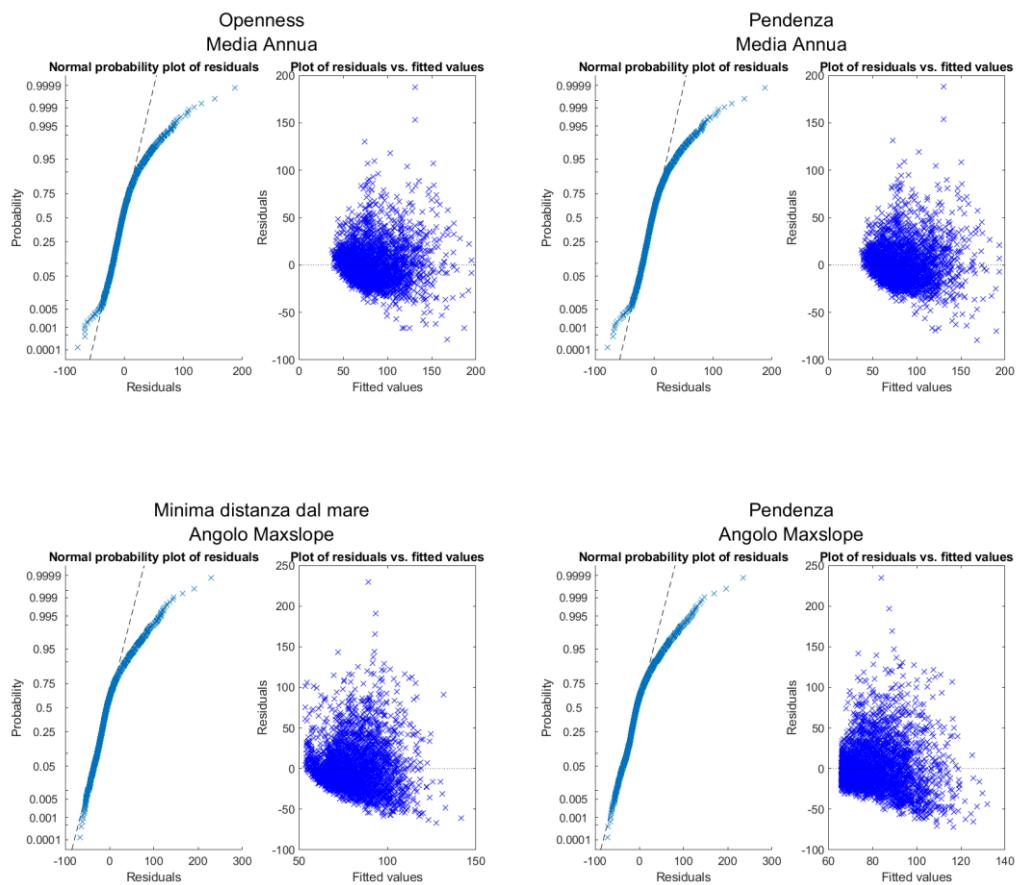
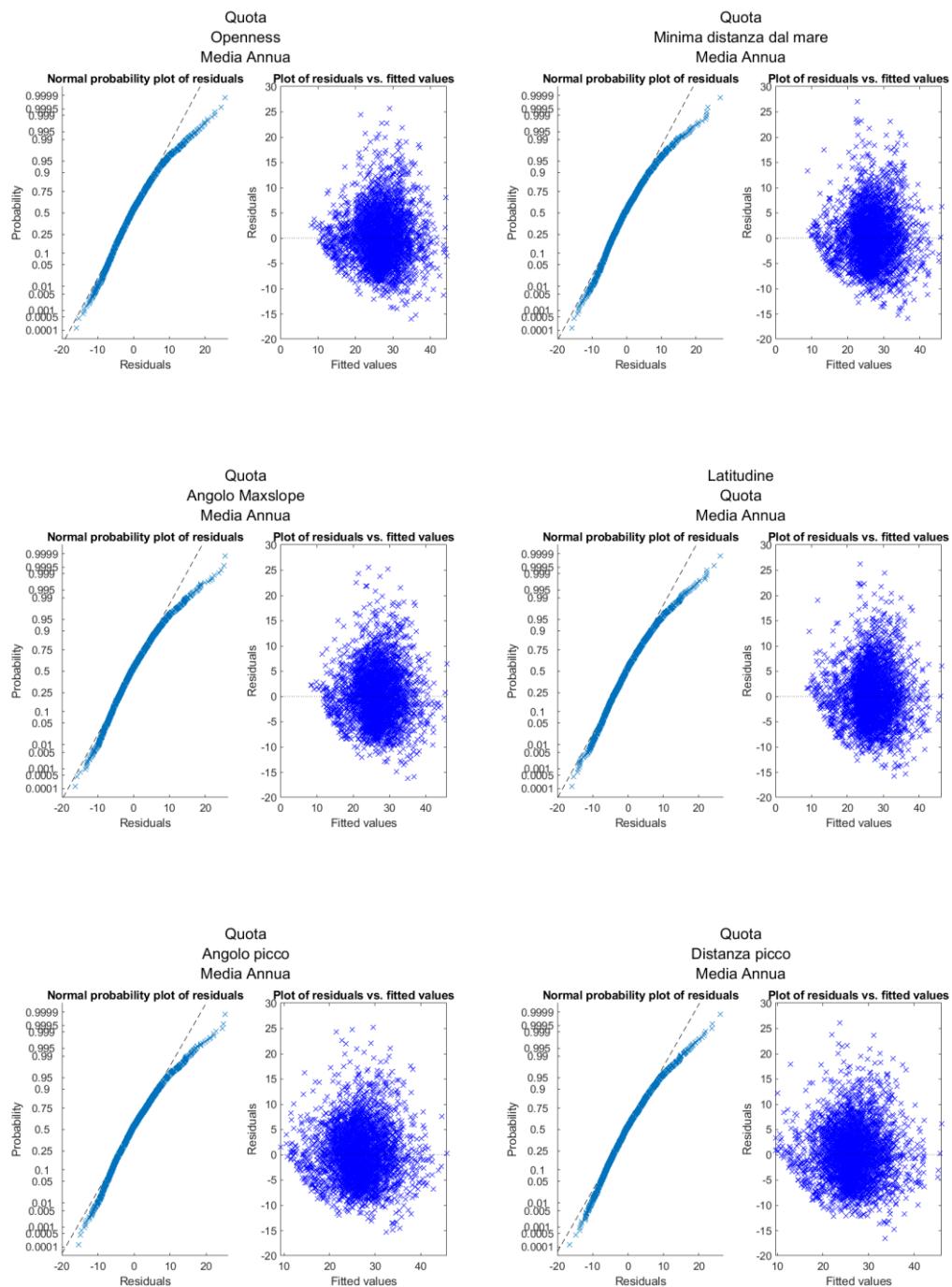


Tabella 16. Regressione 1h con mediana degli estremi, 3 variabili, area Italia.

	Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>
Quota	Openness	Media Annua	0.494	0.493	-1.68E+01	-5.90E-03	2.23E+01	1.24E-02
Quota	Minima distanza dal mare	Media Annua	0.477	0.477	1.96E+01	-5.93E-03	-2.95E-02	1.11E-02
Quota	Angolo Maxslope	Media Annua	0.472	0.472	1.83E+01	-6.20E-03	-1.38E-01	1.24E-02
Latitudine	Quota	Media Annua	0.459	0.459	3.39E+01	-3.39E-06	-7.31E-03	1.20E-02
Quota	Angolo picco	Media Annua	0.452	0.452	1.87E+01	-6.69E-03	-1.24E-01	1.18E-02
Quota	Distanza picco	Media Annua	0.447	0.446	1.92E+01	-7.67E-03	-9.52E-05	1.11E-02
Longitudine	Quota	Media Annua	0.445	0.444	1.76E+01	1.21E-06	-7.44E-03	1.12E-02
Quota	Distanza Maxslope	Media Annua	0.444	0.444	1.84E+01	-7.48E-03	4.38E-05	1.12E-02
Minima distanza dal mare	Openness	Media Annua	0.426	0.425	-2.04E+01	-3.53E-02	2.49E+01	1.13E-02
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.414	0.414	1.89E+01	-4.01E-02	-1.73E-01	1.15E-02

Figura 18. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 3 variabili, area Italia



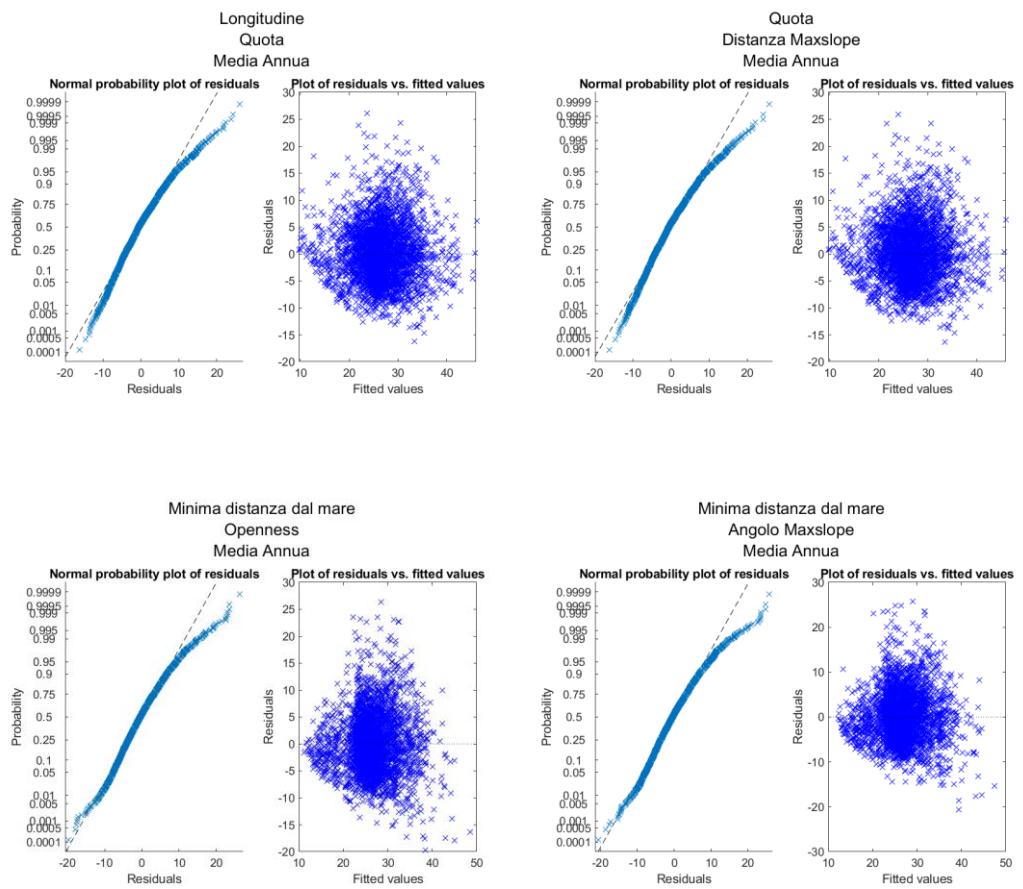
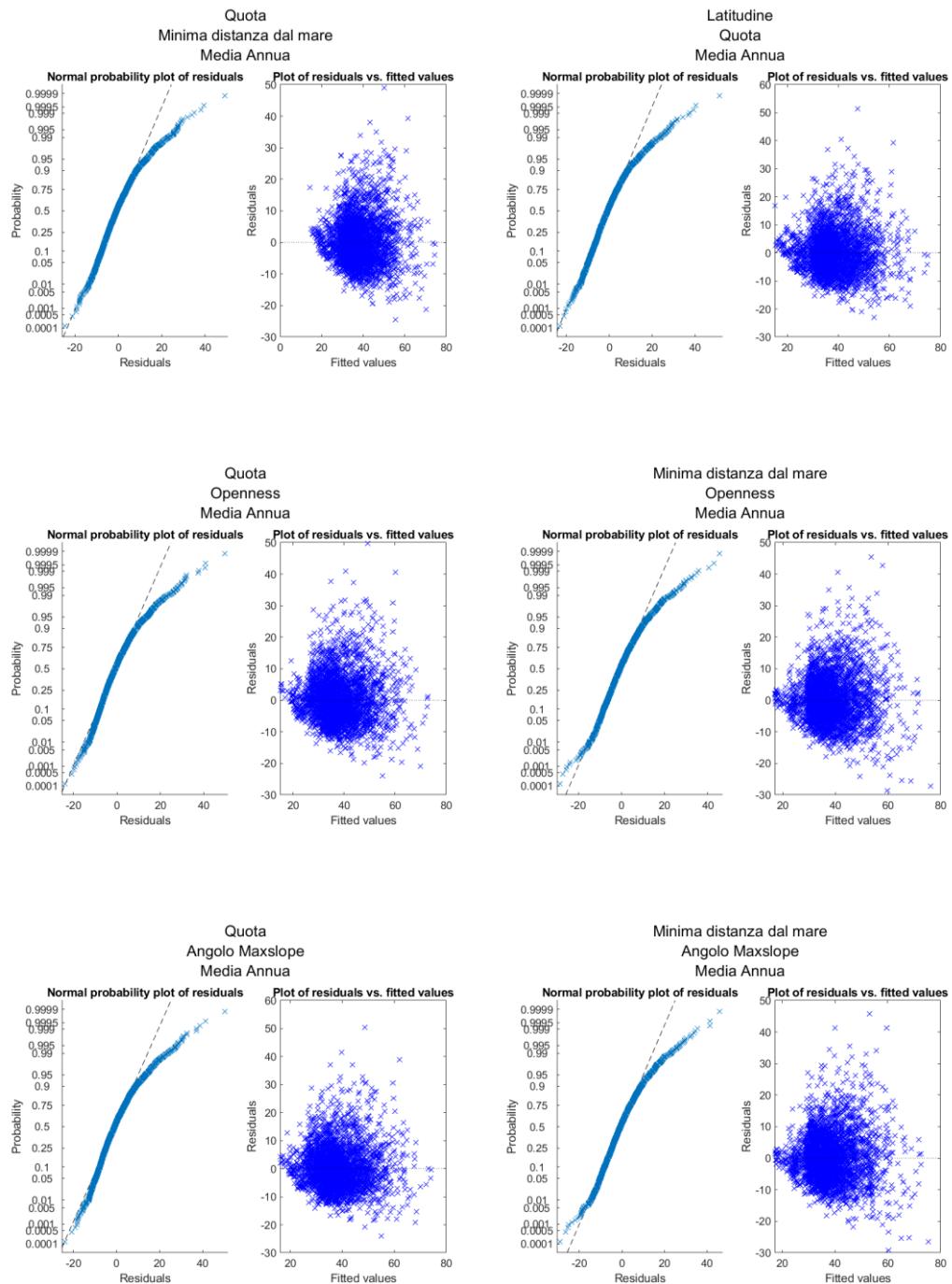


Tabella 17. Regressione 3h con mediana degli estremi, 3 variabili, area Italia.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Quota	Minima distanza dal mare	Media Annua	0.570	0.000	2.19E+01	-5.79E-03	-4.97E-02	2.07E-02
Latitudine	Quota	Media Annua	0.550	0.000	4.77E+01	-6.06E-06	-8.09E-03	2.22E-02
Quota	Openness	Media Annua	0.546	0.000	-1.20E+01	-7.00E-03	2.04E+01	2.19E-02
Minima distanza dal mare	Openness	Media Annua	0.537	0.000	-5.72E+00	-6.09E-02	1.73E+01	2.04E-02
Quota	Angolo Maxslope	Media Annua	0.536	0.000	2.01E+01	-7.41E-03	-1.13E-01	2.18E-02
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.534	0.000	2.15E+01	-6.47E-02	-1.15E-01	2.05E-02
Longitudine	Minima distanza dal mare	Media Annua	0.533	0.000	2.67E+01	-5.09E-06	-8.52E-02	1.89E-02
Minima distanza dal mare	Angolo picco	Media Annua	0.533	0.000	2.20E+01	-6.79E-02	-1.61E-01	2.03E-02
Quota	Distanza picco	Media Annua	0.530	0.000	2.10E+01	-8.65E-03	-1.16E-04	2.08E-02
Pendenza	Minima distanza dal mare	Media Annua	0.530	0.000	2.22E+01	-8.54E-02	-7.24E-02	1.98E-02

Figura 19. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 3 variabili, area Italia



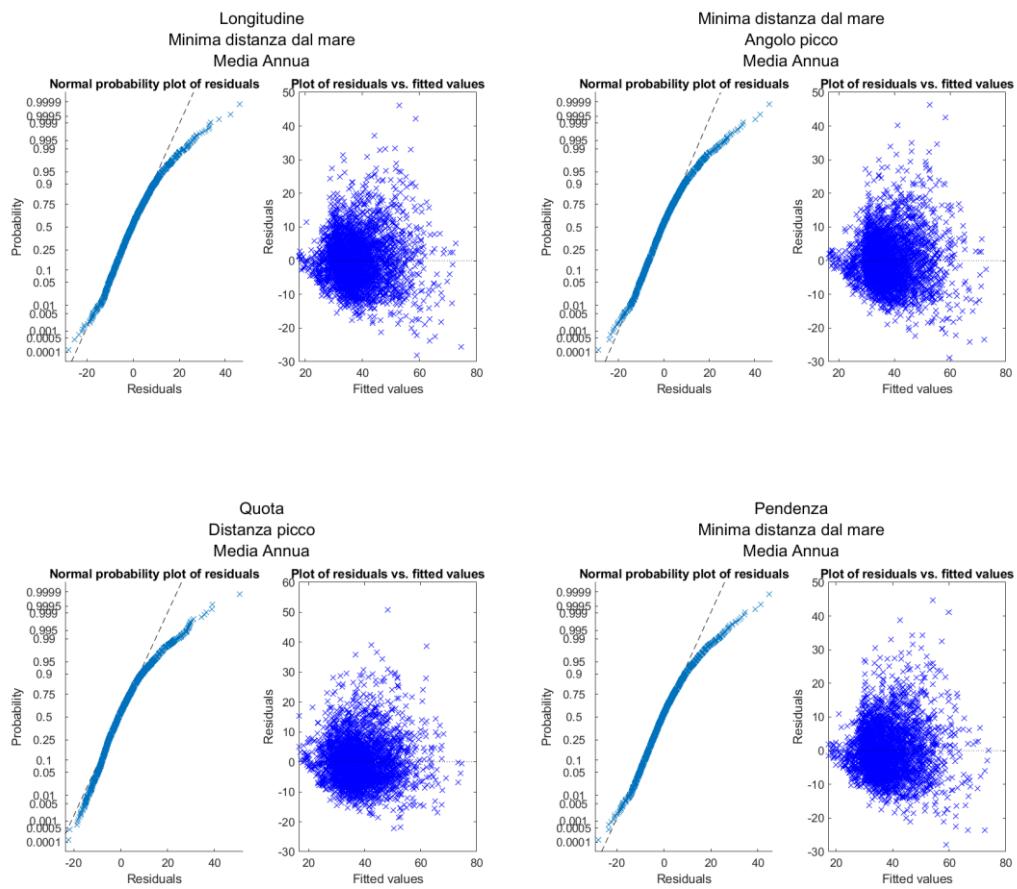
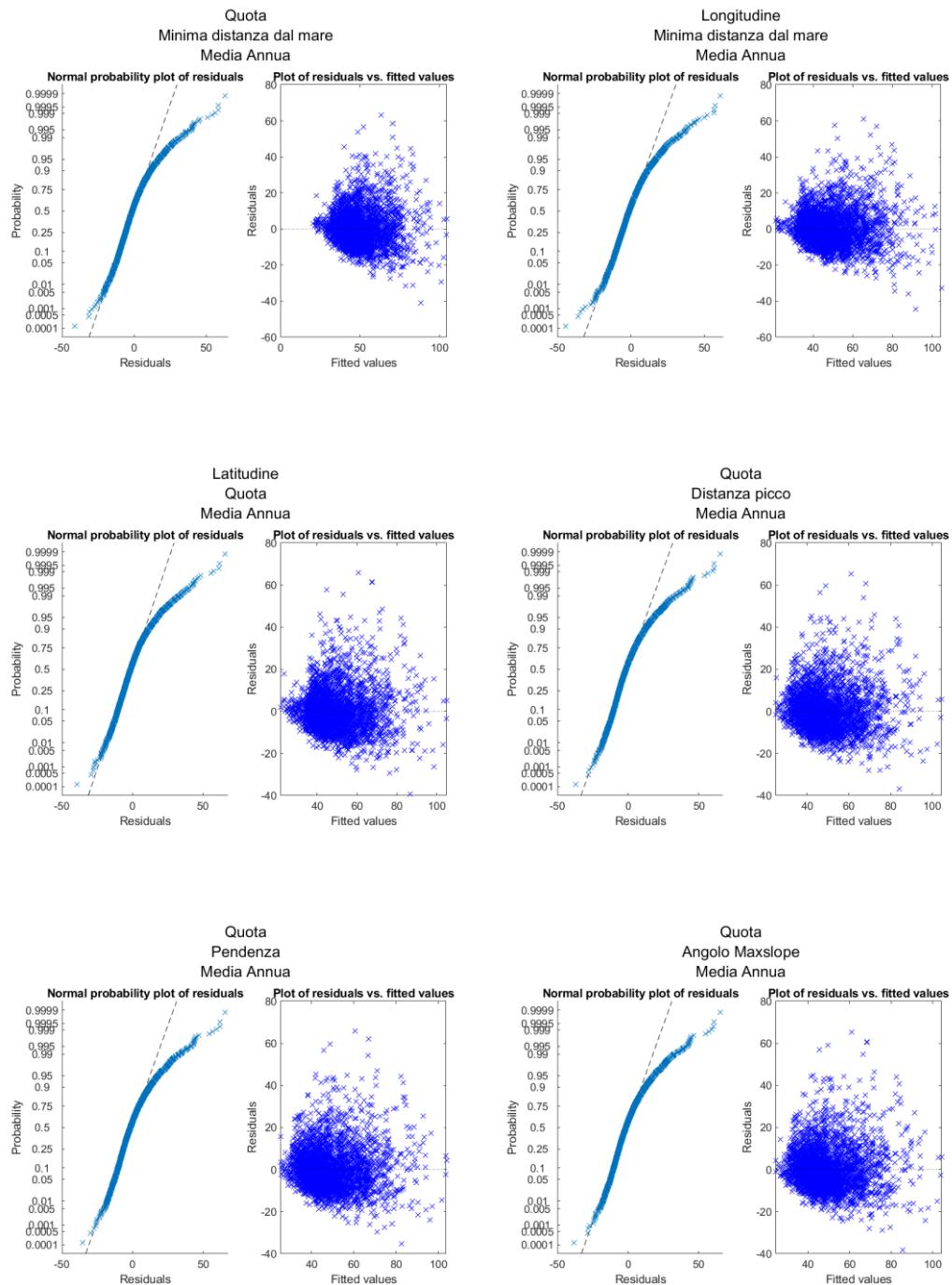


Tabella 18. Regressione 6h con mediana degli estremi, 3 variabili, area Italia.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Quota	Minima distanza dal mare	Media Annua	0.605	0.605	2.15E+01	-3.92E-03	-6.45E-02	3.13E-02
Longitudine	Minima distanza dal mare	Media Annua	0.603	0.603	2.82E+01	-7.22E-06	-9.64E-02	2.98E-02
Latitudine	Quota	Media Annua	0.589	0.588	5.54E+01	-7.96E-06	-6.90E-03	3.32E-02
Quota	Distanza picco	Media Annua	0.571	0.571	2.03E+01	-7.62E-03	-1.32E-04	3.13E-02
Quota	Pendenza	Media Annua	0.571	0.571	1.95E+01	-7.95E-03	6.43E-02	3.11E-02
Quota	Angolo Maxslope	Media Annua	0.570	0.570	1.94E+01	-7.02E-03	-4.46E-02	3.17E-02
Latitudine	Openness	Media Annua	0.559	0.558	2.07E+01	-7.83E-06	2.10E+01	3.26E-02
Latitudine	Angolo Maxslope	Media Annua	0.557	0.557	5.64E+01	-8.45E-06	-1.53E-01	3.30E-02
Latitudine	Angolo picco	Media Annua	0.554	0.554	5.93E+01	-8.97E-06	-2.01E-01	3.27E-02
Latitudine	Pendenza	Media Annua	0.551	0.551	6.12E+01	-9.40E-06	-1.06E-01	3.20E-02

Figura 20. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 3 variabili, area Italia



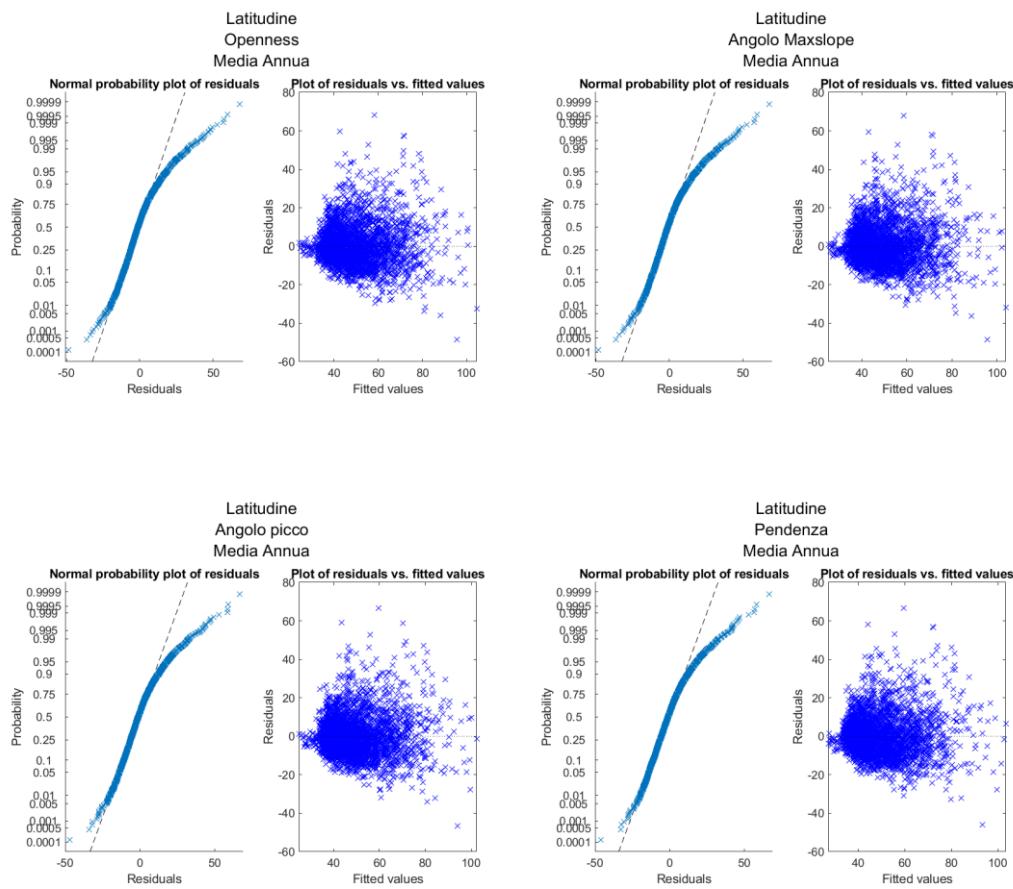
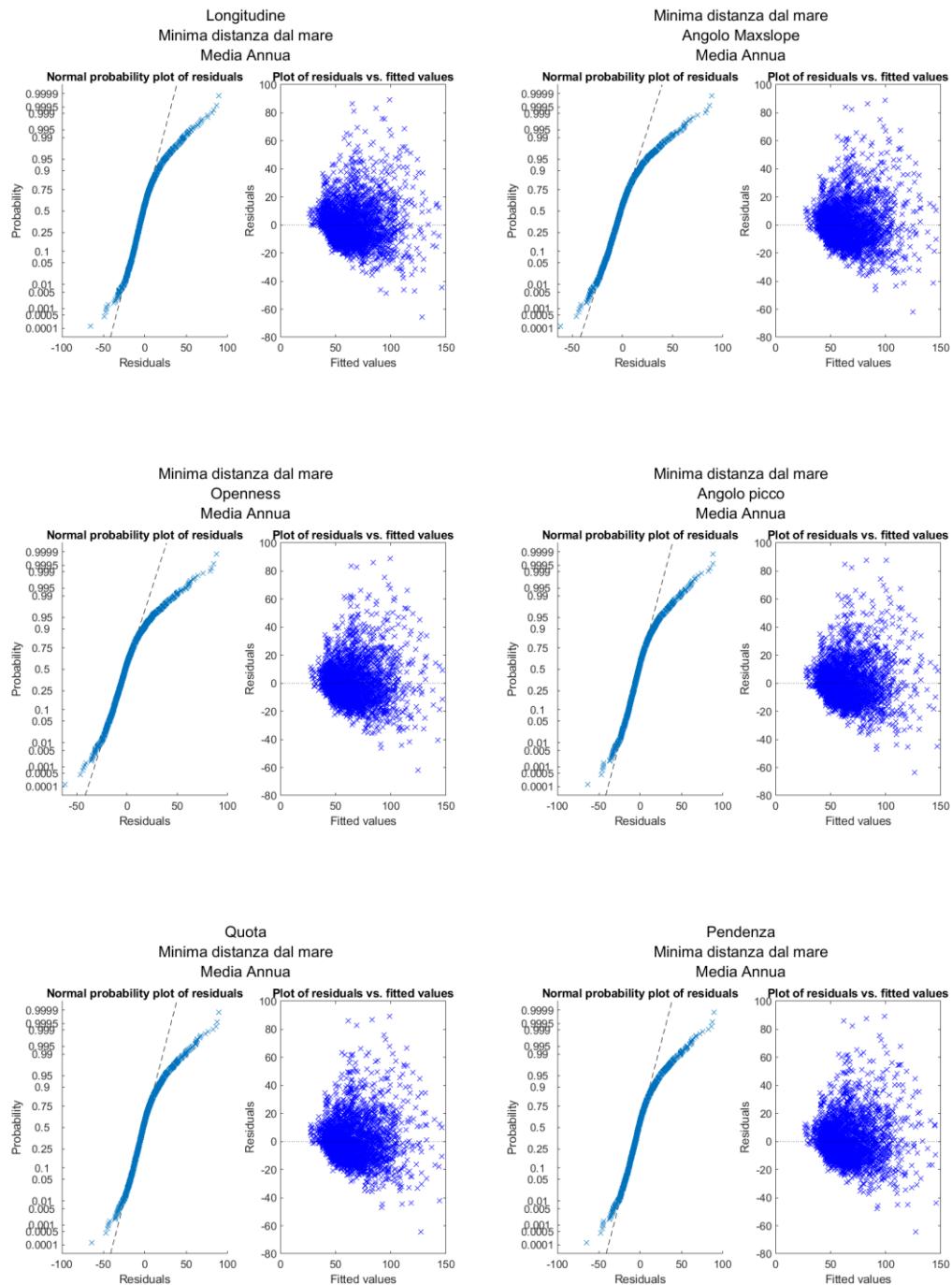


Tabella 19. Regressione 12h con mediana degli estremi, 3 variabili, area Italia.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.630	0.629	2.95E+01	-1.13E-05	-1.03E-01	4.54E-02
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.623	0.623	1.98E+01	-9.21E-02	1.45E-01	4.45E-02
Minima distanza dal mare	Openness	Media Annua	0.623	0.623	4.89E+01	-9.43E-02	-	1.85E+01
Minima distanza dal mare	Angolo picco	Media Annua	0.622	0.622	1.92E+01	-8.71E-02	1.78E-01	4.49E-02
Quota	Minima distanza dal mare	Media Annua	0.621	0.620	1.91E+01	-1.28E-03	-7.41E-02	4.64E-02
Pendenza	Minima distanza dal mare	Media Annua	0.621	0.620	1.91E+01	5.74E-02	-8.11E-02	4.57E-02
Latitudine	Quota	Media Annua	0.608	0.608	5.38E+01	-8.20E-06	-4.76E-03	4.84E-02
Quota	Angolo picco	Media Annua	0.600	0.600	1.68E+01	-6.52E-03	1.71E-01	4.56E-02
Quota	Pendenza	Media Annua	0.600	0.600	1.67E+01	-6.20E-03	1.13E-01	4.60E-02
Quota	Distanza picco	Media Annua	0.599	0.599	1.76E+01	-5.49E-03	-1.32E-04	4.64E-02

Figura 21. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 3 variabili, area Italia



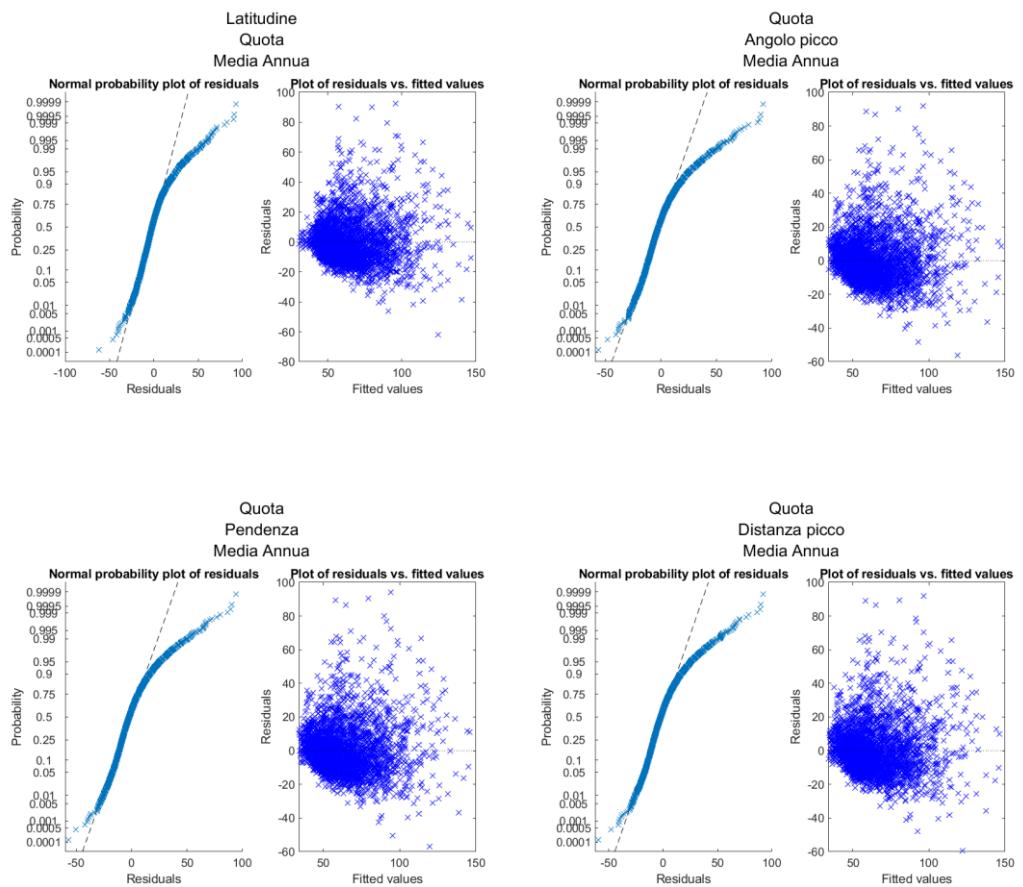
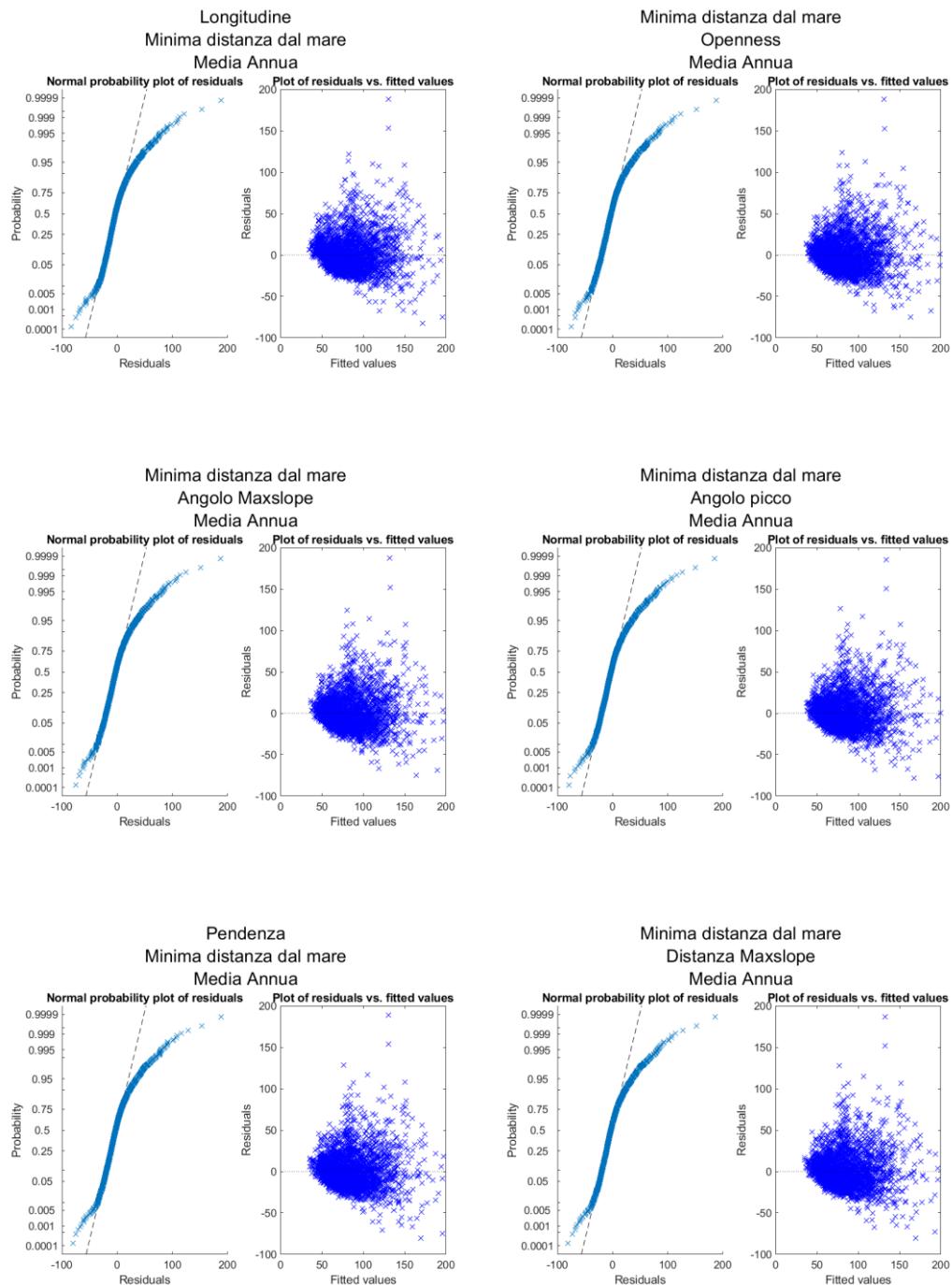
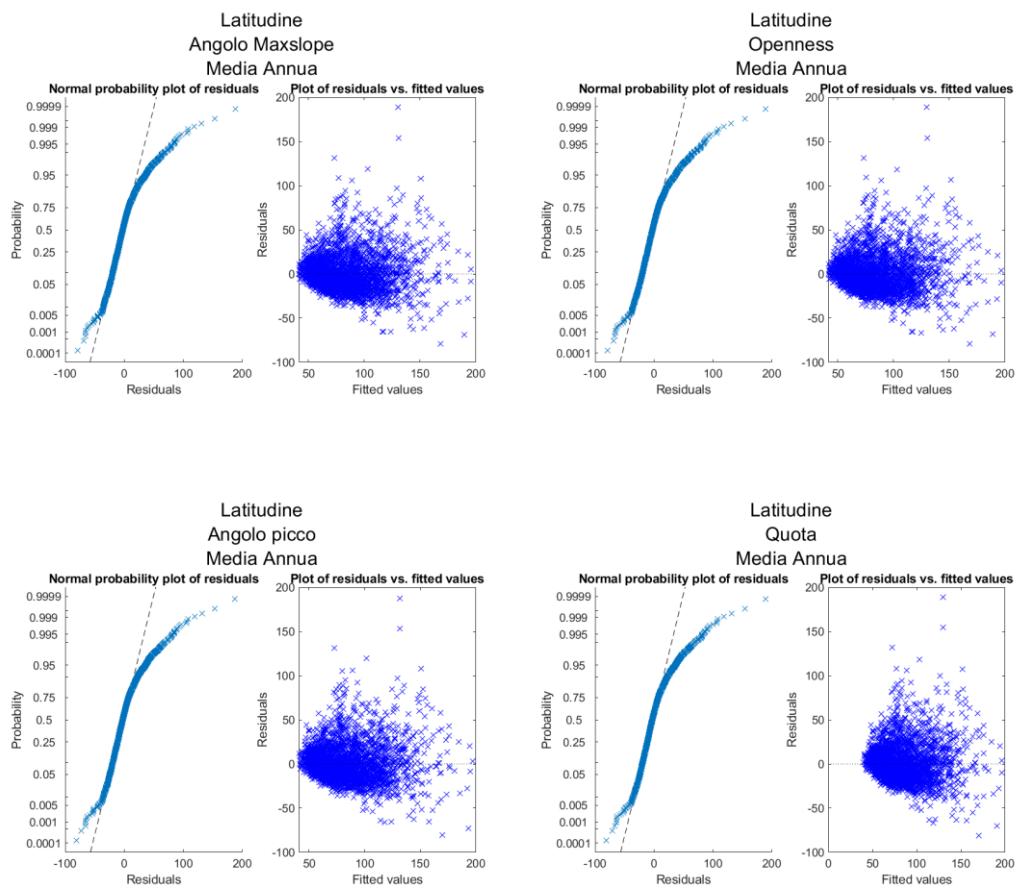


Tabella 20. Regressione 24h con mediana degli estremi, 3 variabili, area Italia.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.623	0.623	3.11E+01	-1.66E-05	-9.49E-02	6.38E-02
Minima distanza dal mare	Openness	Media Annua	0.621	0.621	8.16E+01	-9.28E-02	-	4.08E+01
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.620	0.620	1.73E+01	-8.68E-02	3.06E-01	6.13E-02
Minima distanza dal mare	Angolo picco	Media Annua	0.618	0.617	1.60E+01	-7.58E-02	3.65E-01	6.23E-02
Pendenza	Minima distanza dal mare	Media Annua	0.615	0.614	1.57E+01	1.48E-01	-6.43E-02	6.38E-02
Minima distanza dal mare	Distanza Maxslope	Media Annua	0.614	0.613	1.72E+01	-6.24E-02	-2.04E-04	6.43E-02
Latitudine	Angolo Maxslope	Media Annua	0.609	0.609	5.20E+01	-8.47E-06	1.40E-01	6.41E-02
Latitudine	Openness	Media Annua	0.609	0.609	8.17E+01	-8.92E-06	-	1.76E+01
Latitudine	Angolo picco	Media Annua	0.609	0.609	4.94E+01	-7.98E-06	1.81E-01	6.44E-02
Latitudine	Quota	Media Annua	0.608	0.608	4.68E+01	-7.30E-06	-1.74E-03	6.62E-02

Figura 22. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 3 variabili, area Italia





## Allegato 5 – Regressioni lineari multiple per l’area Alpina

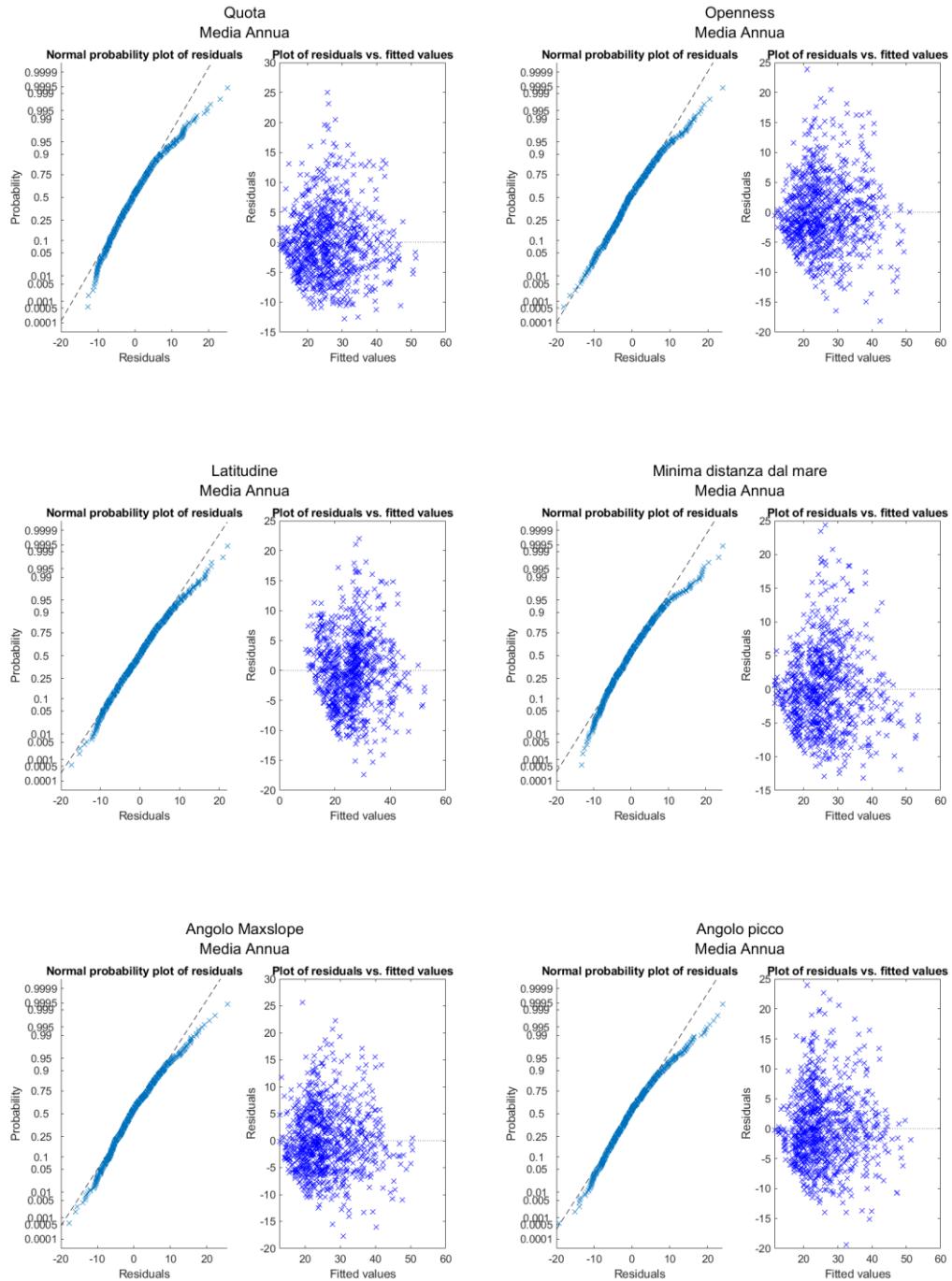
### *Regressioni con la media delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h*

Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la media degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l’area Alpina. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 21. Regressione 1h con media degli estremi, 2 variabili, area Alpi.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Quota	Media annua	0.642	0.641	1.34E+01	-5.58E-03	1.45E-02	1.05	1.05
Openness	Media annua	0.622	0.621	-3.58E+01	3.07E+01	1.54E-02	1.01	1.01
Latitudine	Media annua	0.616	0.615	1.64E+02	-3.14E-05	1.77E-02	1.05	1.05
Min Dist. dal Mare	Media annua	0.612	0.611	1.32E+01	-4.95E-02	1.51E-02	1.03	1.03
Angolo maxslope	Media annua	0.594	0.593	1.17E+01	-2.32E-01	1.61E-02	1.00	1.00
Angolo picco	Media annua	0.582	0.581	1.09E+01	-3.28E-01	1.64E-02	1.00	1.00
Longitudine	Media annua	0.551	0.550	9.14E+00	-8.22E-06	1.74E-02	1.17	1.17
Distanza maxslope	Media annua	0.540	0.539	5.38E+00	3.60E-04	1.62E-02	1.00	1.00
Quota	Openness	0.356	0.355	-1.61E+01	-7.57E-03	3.55E+01	1.01	1.01
Quota	Min Dist. dal Mare	0.298	0.296	3.75E+01	-6.45E-03	-4.58E-02	1.15	1.15

*Figura 23. Diagrammi diagnostici per regressione 1h con media degli estremi, 2 variabili, area Alpi*



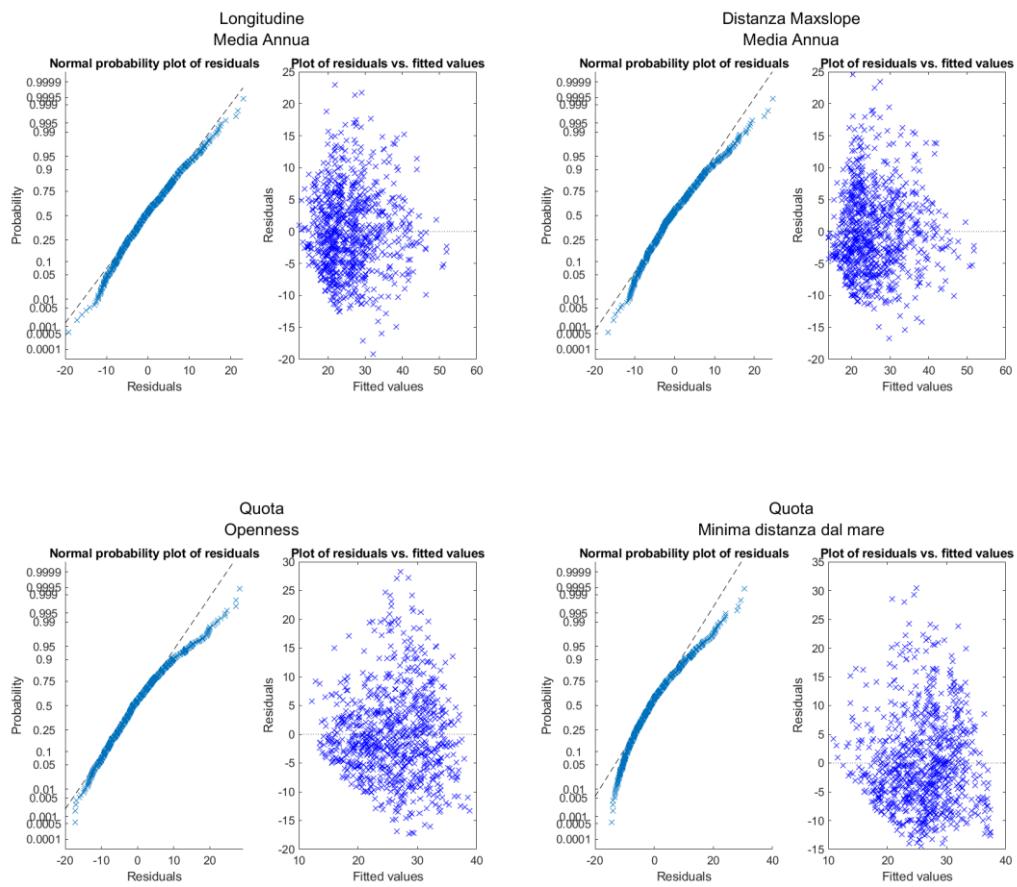
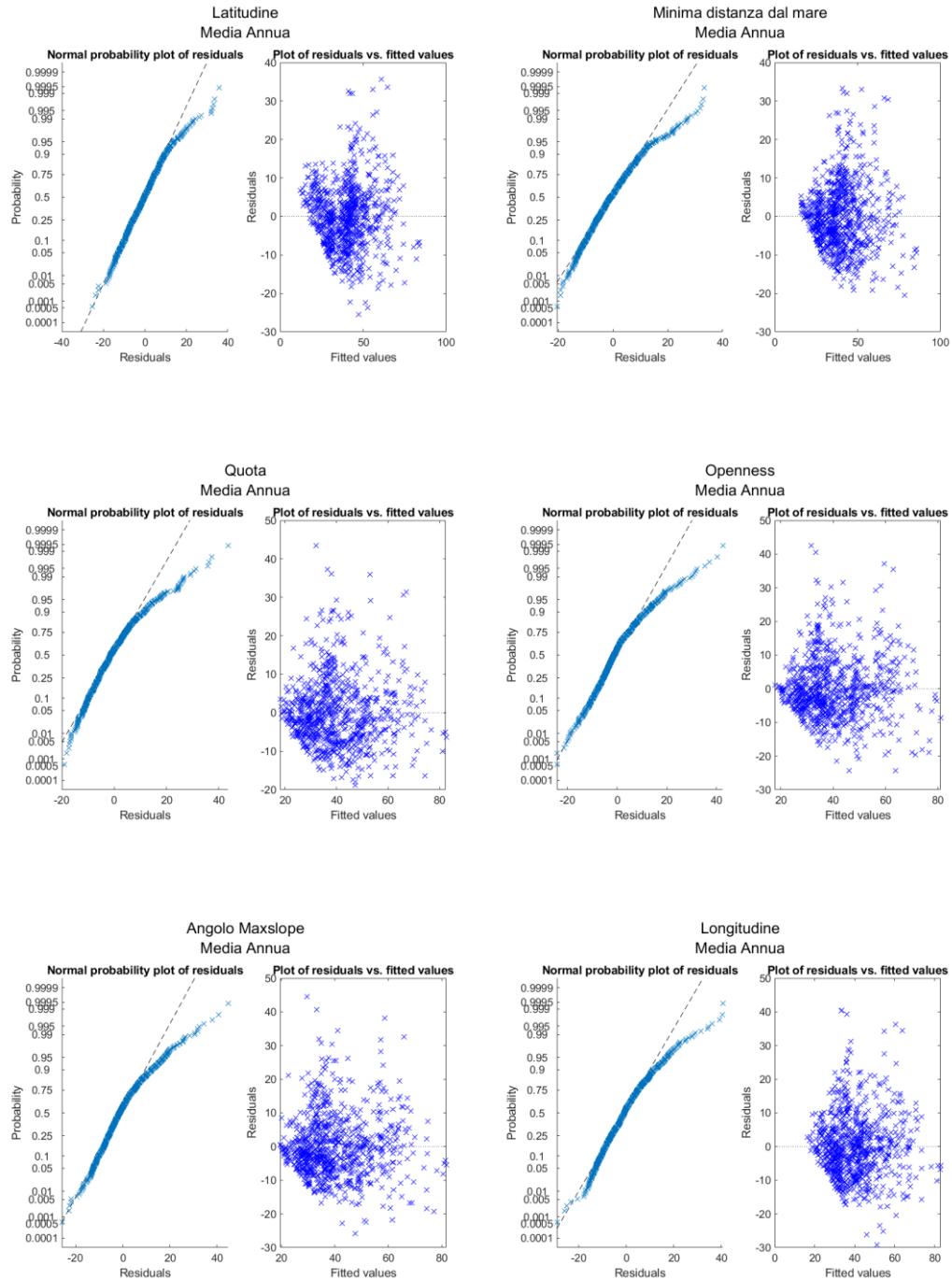


Tabella 22. Regressione 3h con media degli estremi, 2 variabili, area Alpi.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Latitudine	Media annua	0.690	0.689	2.83E+02	-5.51E-05	2.96E-02	1.05	1.05
Min Dist. dal Mare	Media annua	0.675	0.674	1.85E+01	-8.19E-02	2.52E-02	1.03	1.03
Quota	Media annua	0.660	0.659	1.60E+01	-7.10E-03	2.49E-02	1.05	1.05
Openness	Media annua	0.638	0.637	-4.21E+01	3.58E+01	2.62E-02	1.01	1.01
Angolo maxslope	Media annua	0.623	0.622	1.32E+01	-2.71E-01	2.70E-02	1.00	1.00
Longitudine	Media annua	0.618	0.617	1.30E+01	-1.68E-05	2.95E-02	1.17	1.17
Angolo picco	Media annua	0.611	0.610	1.16E+01	-3.38E-01	2.72E-02	1.00	1.00
Quota	Min Dist. dal Mare	0.269	0.267	5.79E+01	-8.40E-03	-8.46E-02	1.15	1.15
Quota	Distanza picco	0.251	0.249	5.82E+01	-1.30E-02	-1.32E-03	1.07	1.07
Quota	Angolo maxslope	0.206	0.204	5.51E+01	-1.08E-02	-2.06E-01	1.02	1.02

*Figura 24. Diagrammi diagnostici per regressione 3h con media degli estremi, 2 variabili, area Alpi*



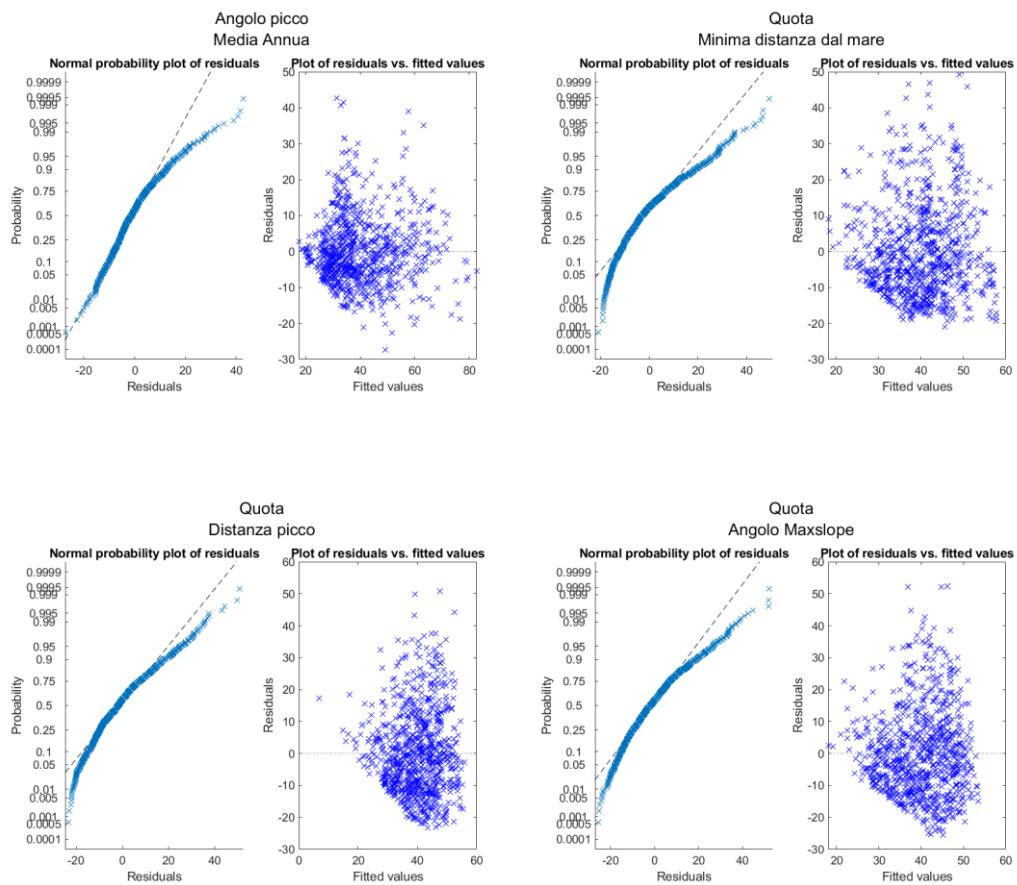
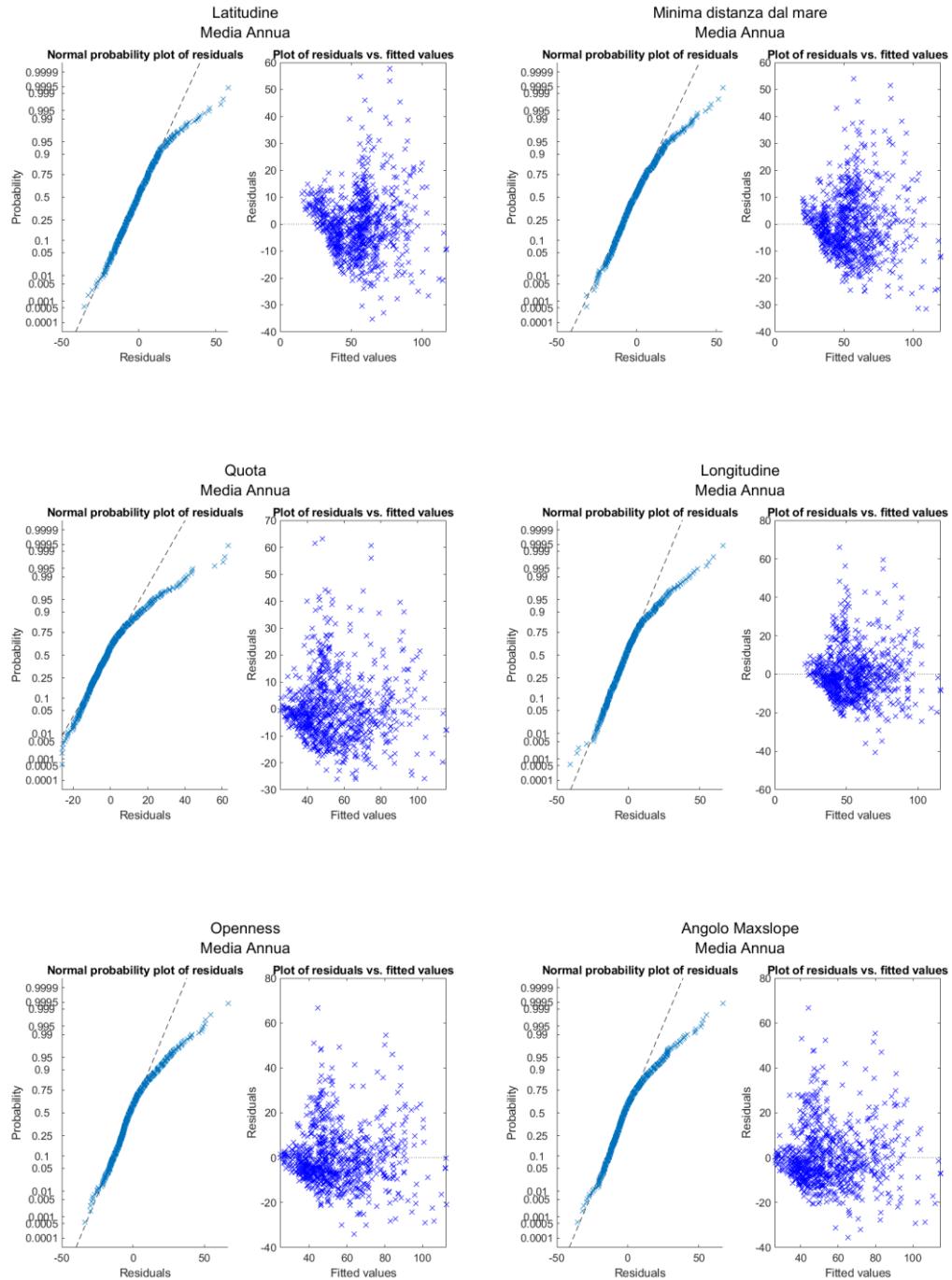


Tabella 23. Regressione 6h con media degli estremi, 2 variabili, area Alpi.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Latitudine	Media annua	0.710	0.710	4.00E+02	-7.85E-05	4.20E-02	1.05	1.05
Min Dist. dal Mare	Media annua	0.699	0.698	2.45E+01	-1.20E-01	3.58E-02	1.03	1.03
Quota	Media annua	0.648	0.647	1.72E+01	-7.61E-03	3.62E-02	1.05	1.05
Longitudine	Media annua	0.635	0.634	1.61E+01	-2.34E-05	4.19E-02	1.17	1.17
Openness	Media annua	0.631	0.630	-4.14E+01	3.57E+01	3.76E-02	1.01	1.01
Angolo maxslope	Media annua	0.623	0.622	1.35E+01	-2.61E-01	3.84E-02	1.00	1.00
Angolo picco	Media annua	0.614	0.613	1.11E+01	-2.68E-01	3.86E-02	1.00	1.00
Distanza picco	Media annua	0.609	0.608	8.90E+00	-3.21E-04	3.82E-02	1.02	1.02
Quota	Min Dist. dal Mare	0.245	0.243	7.90E+01	-9.14E-03	-1.34E-01	1.15	1.15
Quota	Distanza picco	0.209	0.207	7.86E+01	-1.62E-02	-1.91E-03	1.07	1.07

Figura 25. Diagrammi diagnostici per regressione 6h con media degli estremi, 2 variabili, area Alpi



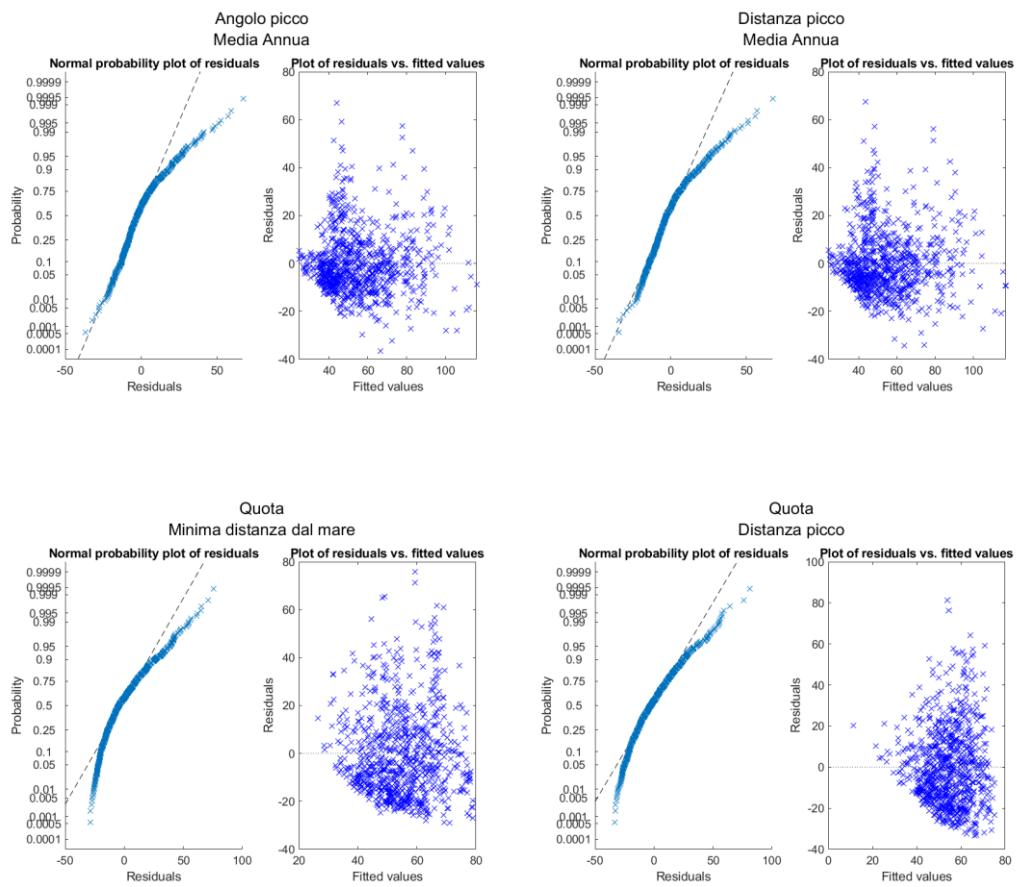
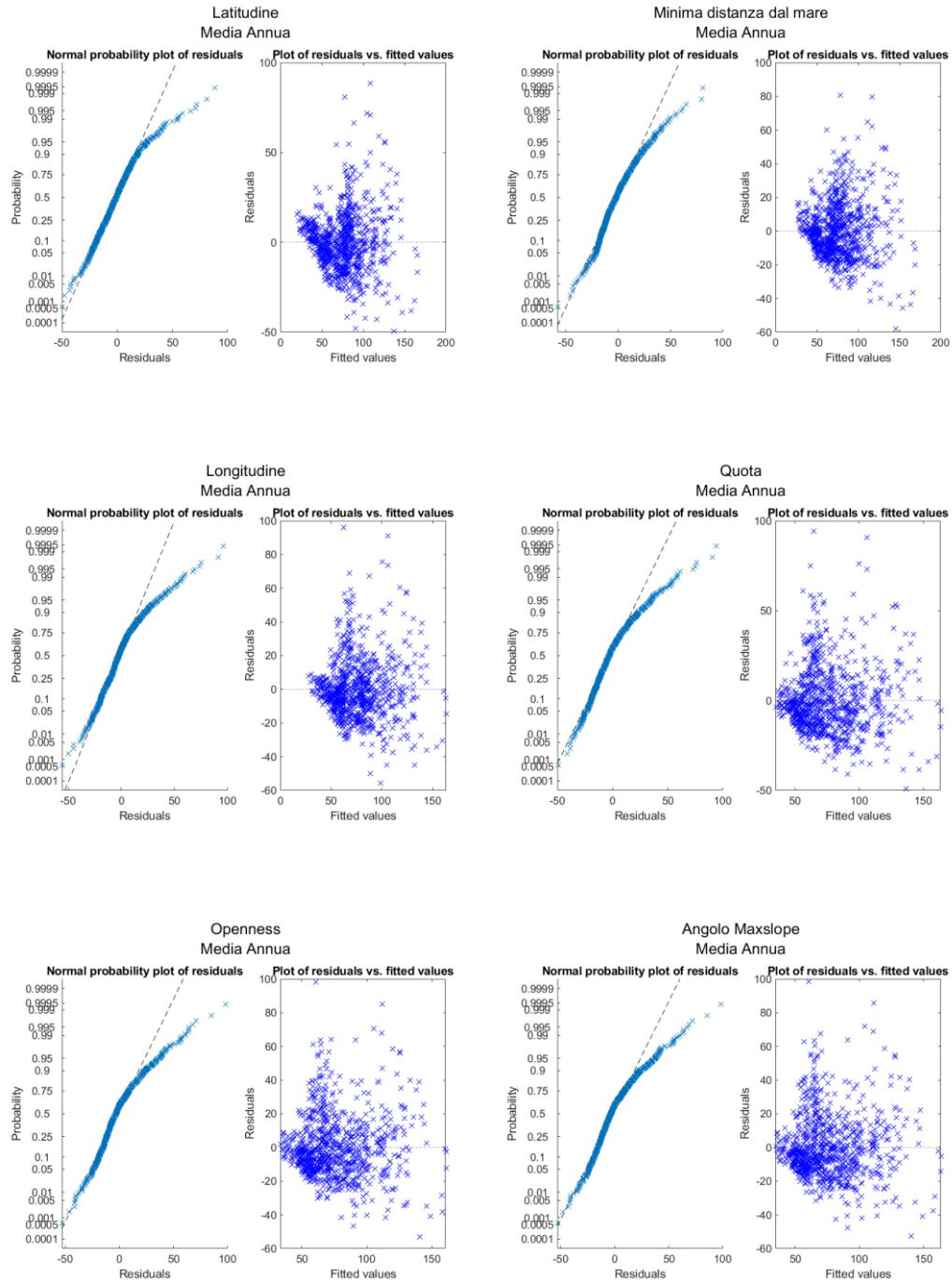


Tabella 24. Regressione 12h con media degli estremi, 2 variabili, area Alpi.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Latitudine	Media annua	0.708	0.707	5.51E+02	-1.08E-04	6.00E-02	1.05	1.05
Min Dist. dal Mare	Media annua	0.692	0.691	3.11E+01	-1.60E-01	5.16E-02	1.03	1.03
Longitudine	Media annua	0.642	0.641	2.14E+01	-3.52E-05	6.02E-02	1.17	1.17
Quota	Media annua	0.632	0.631	1.81E+01	-7.73E-03	5.28E-02	1.05	1.05
Openness	Media annua	0.620	0.619	-3.39E+01	3.07E+01	5.44E-02	1.01	1.01
Angolo maxslope	Media annua	0.616	0.615	1.28E+01	-2.00E-01	5.51E-02	1.00	1.00
Distanza picco	Media annua	0.614	0.614	1.10E+01	-5.64E-04	5.46E-02	1.02	1.02
Quota	Min Dist. dal Mare	0.207	0.205	1.08E+02	-1.01E-02	-1.92E-01	1.15	1.15
Min Dist. dal Mare	Distanza picco	0.191	0.189	1.08E+02	-2.24E-01	-1.33E-03	1.01	1.01
Min Dist. dal Mare	Angolo picco	0.186	0.184	9.63E+01	-2.48E-01	5.50E-01	1.08	1.08

*Figura 26. Diagrammi diagnostici per regressione 12h con media degli estremi, 2 variabili, area Alpi*



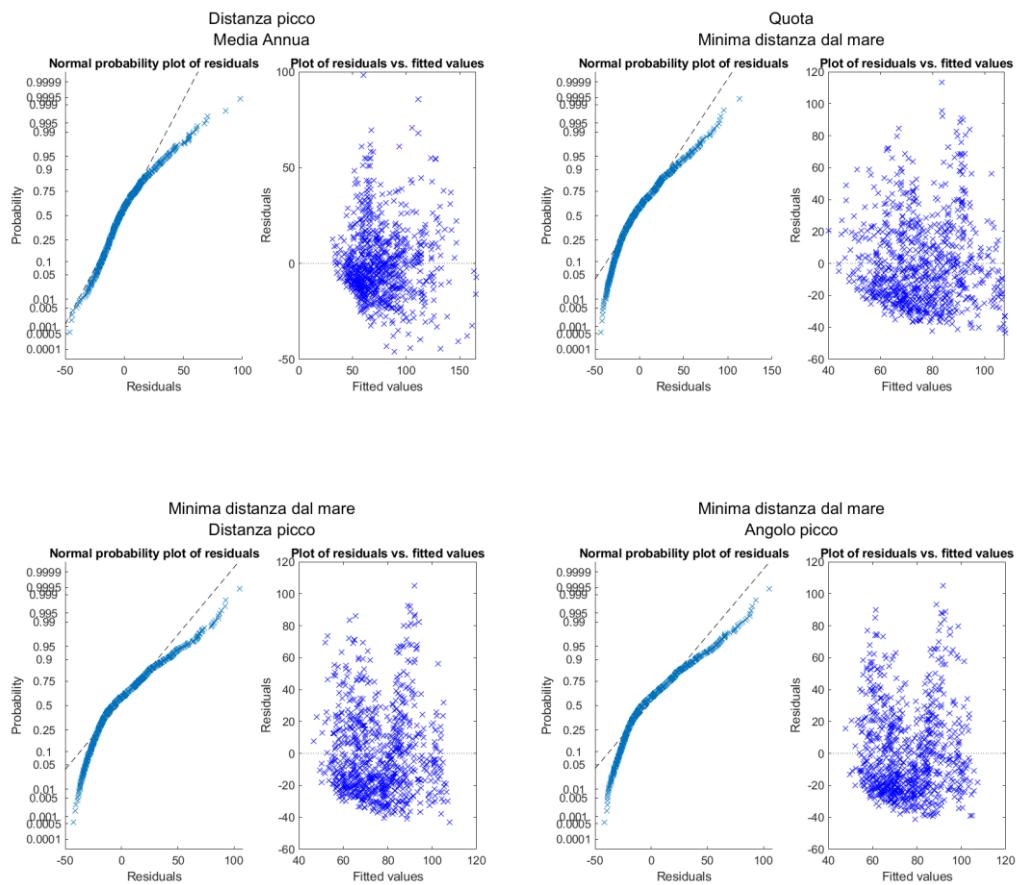
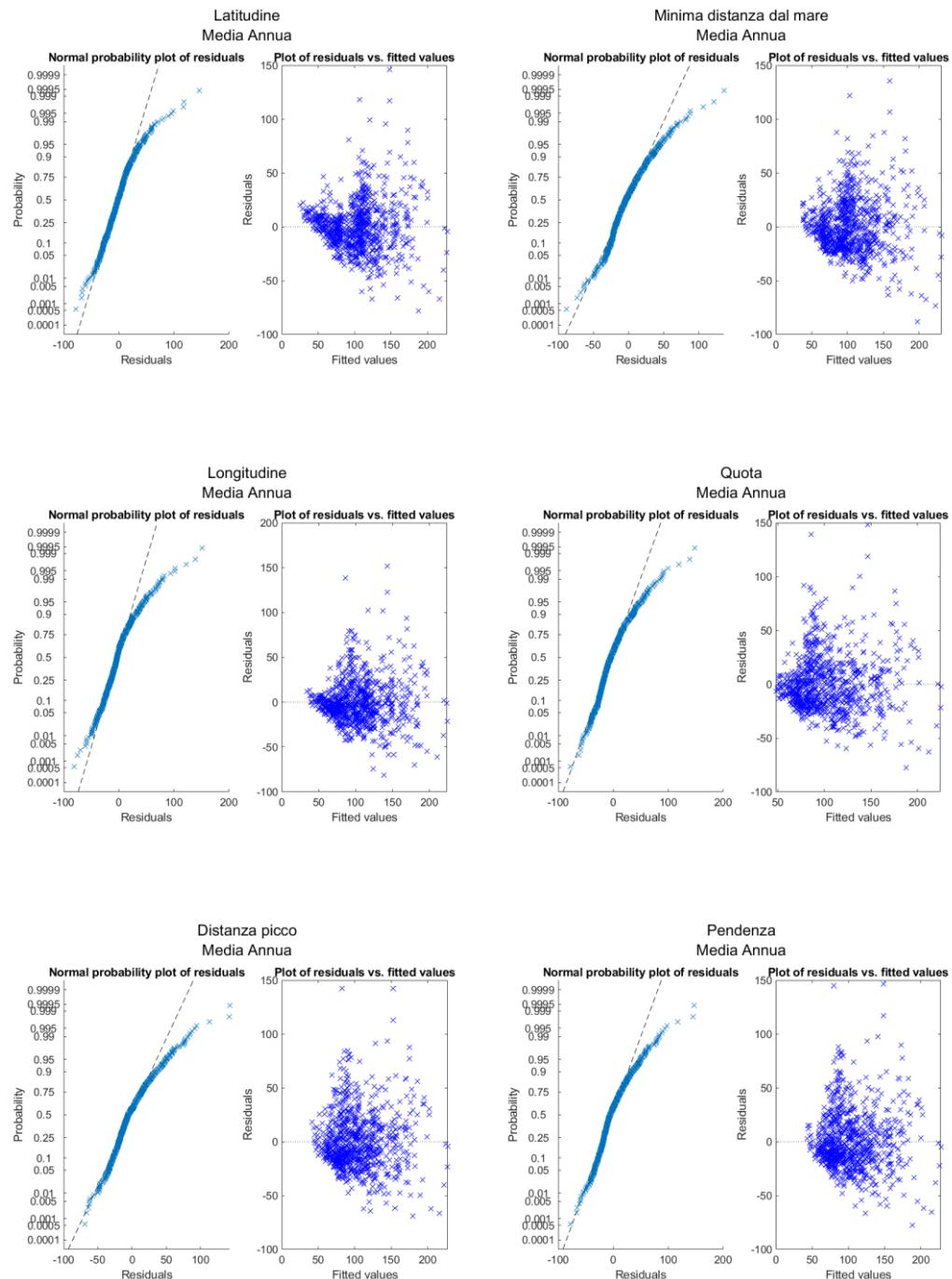


Tabella 25. Regressione 24h con media degli estremi, 2 variabili, area Alpi.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Latitudine	Media annua	0.695	0.695	7.82E+02	-1.54E-04	8.32E-02	1.05	1.05
Min Dist. dal Mare	Media annua	0.653	0.652	3.68E+01	-1.88E-01	7.20E-02	1.03	1.03
Longitudine	Media annua	0.645	0.644	3.35E+01	-6.26E-05	8.52E-02	1.17	1.17
Quota	Media annua	0.607	0.606	1.97E+01	-7.77E-03	7.39E-02	1.05	1.05
Distanza picco	Media annua	0.600	0.599	1.48E+01	-9.49E-04	7.53E-02	1.02	1.02
Pendenza	Media annua	0.598	0.597	6.90E+00	1.91E-01	7.61E-02	1.00	1.00
Quota	Min Dist. dal Mare	0.161	0.159	1.43E+02	-1.21E-02	-2.41E-01	1.15	1.15
Min Dist. dal Mare	Distanza picco	0.158	0.156	1.45E+02	-2.77E-01	-2.07E-03	1.01	1.01
Min Dist. dal Mare	Angolo picco	0.155	0.153	1.26E+02	-3.15E-01	9.08E-01	1.08	1.08
Pendenza	Min Dist. dal Mare	0.152	0.150	1.32E+02	4.71E-01	-2.97E-01	1.01	1.01

*Figura 27. Diagrammi diagnostici per regressione 24h con media degli estremi, 2 variabili, area Alpi*



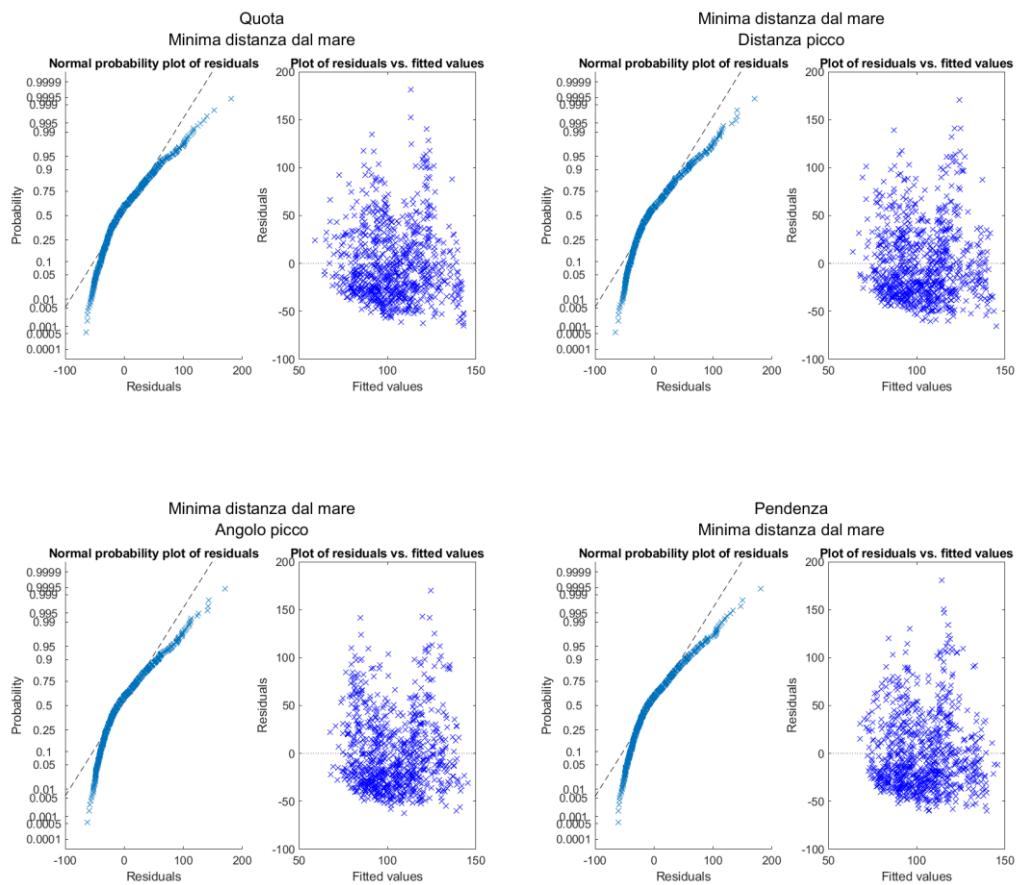
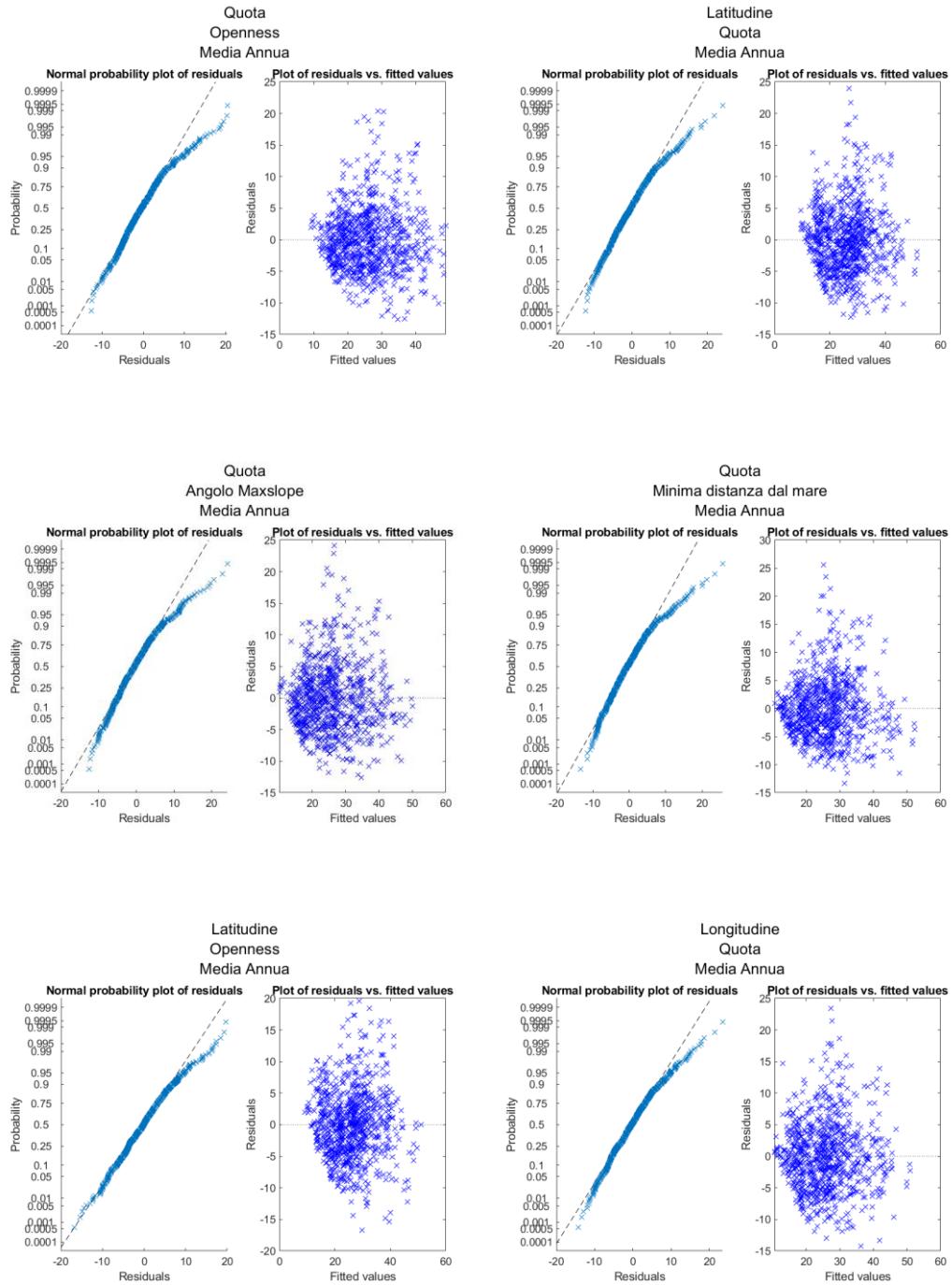


Tabella 26. Regressione 1h con media degli estremi, 3 variabili, area Alpi.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Quota	Openness	Media annua	0.721	0.720	-2.64E+01	-5.33E-03	2.90E+01	1.38E-02	1.06	1.02	1.07
Latitudine	Quota	Media annua	0.695	0.694	1.41E+02	-2.56E-05	-4.85E-03	1.59E-02	1.09	1.09	1.13
Quota	Angolo maxslope	Media annua	0.683	0.682	1.75E+01	-5.11E-03	-1.93E-01	1.46E-02	1.08	1.02	1.06
Quota	Min Dist. dal Mare	Media annua	0.675	0.674	1.69E+01	-4.52E-03	-3.40E-02	1.41E-02	1.18	1.16	1.07
Latitudine	Openness	Media annua	0.666	0.664	9.32E+01	-2.39E-05	2.41E+01	1.67E-02	1.15	1.11	1.09
Longitudine	Quota	Media annua	0.665	0.664	1.74E+01	-9.72E-06	-5.76E-03	1.59E-02	1.17	1.06	1.21
Quota	Angolo picco	Media annua	0.659	0.658	1.56E+01	-4.92E-03	-2.03E-01	1.48E-02	1.15	1.09	1.07
Min Dist. dal Mare	Openness	Media annua	0.657	0.656	-2.08E+01	-3.54E-02	2.35E+01	1.48E-02	1.18	1.16	1.04
Quota	Distanza picco	Media annua	0.653	0.651	1.61E+01	-6.14E-03	-3.47E-04	1.40E-02	1.16	1.13	1.11
Latitudine	Angolo maxslope	Media annua	0.650	0.649	1.44E+02	-2.66E-05	-1.79E-01	1.74E-02	1.11	1.06	1.05

Figura 28. Diagrammi diagnostici per regressione 1h con media degli estremi, 3 variabili, area Alpi



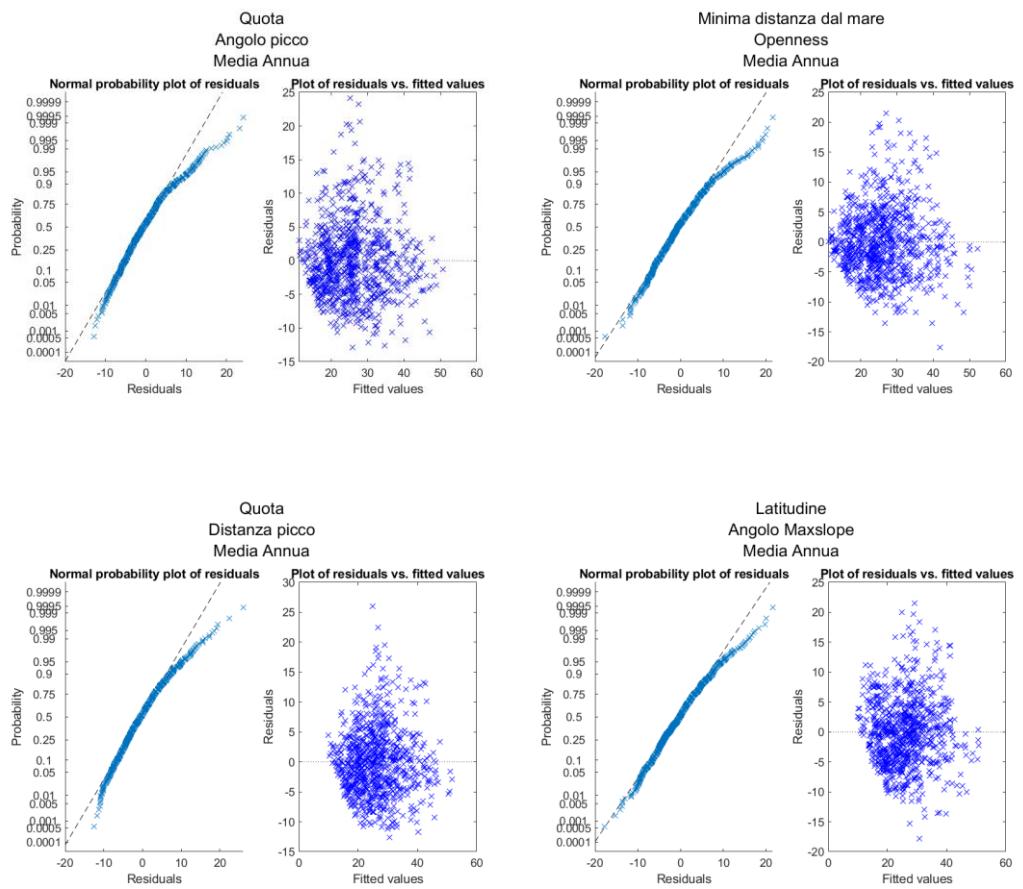
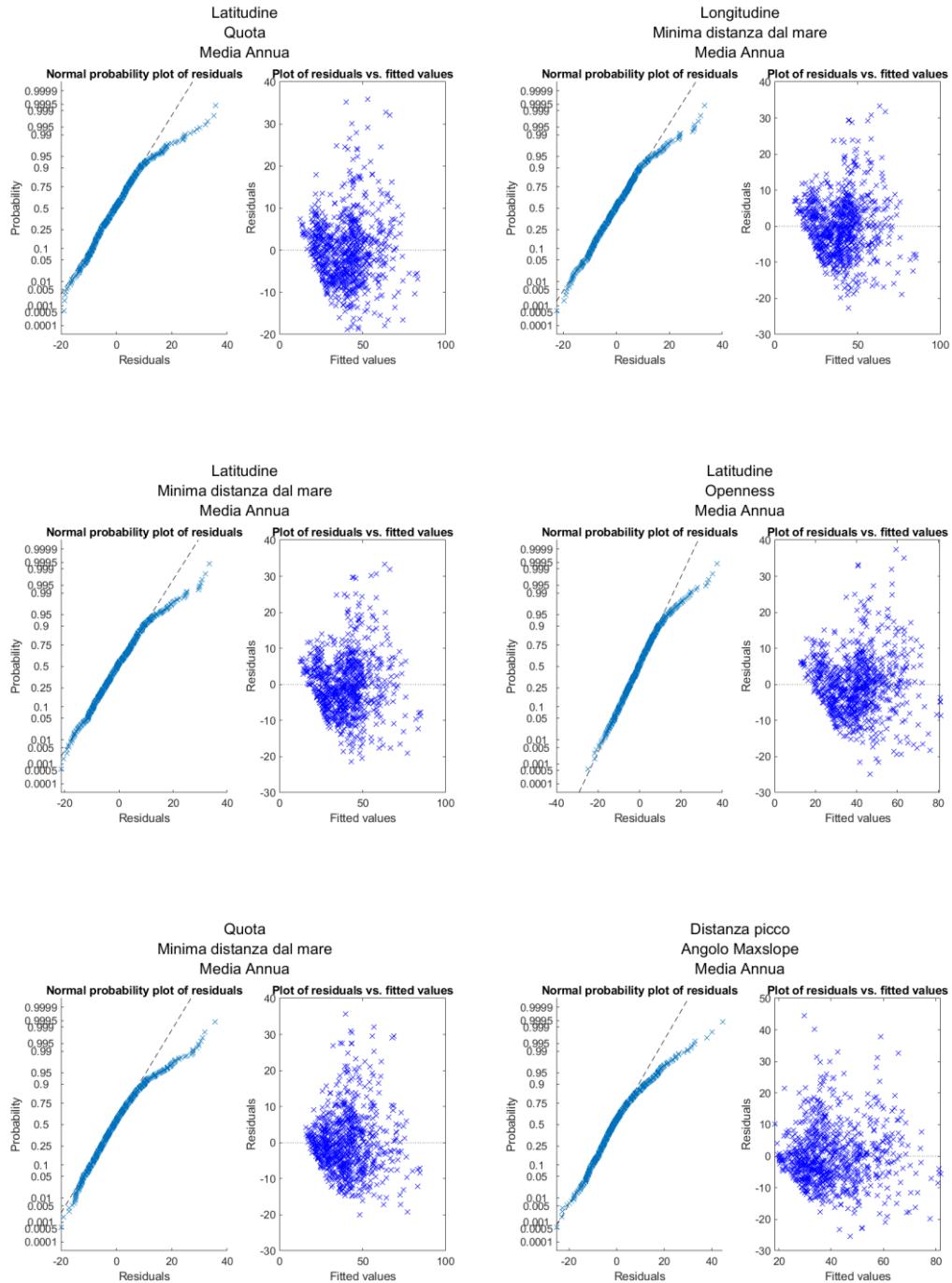


Tabella 27. Regressione 3h con media degli estremi, 3 variabili, area Alpi.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	VIF 1	VIF 2	VIF 3
Latitudine	Quota	Media annua	0.734	0.733	2.56E+02	-4.82E-05	-5.72E-03	2.75E-02	1.09	1.09	1.13
Longitudine	Min Dist. dal Mare	Media annua	0.720	0.719	2.82E+01	-2.17E-05	-9.10E-02	2.81E-02	1.19	1.06	1.18
Latitudine	Min Dist. dal Mare	Media annua	0.709	0.708	2.09E+02	-3.90E-05	-4.70E-02	2.78E-02	1.51	1.49	1.18
Latitudine	Openness	Media annua	0.707	0.706	2.17E+02	-4.81E-05	2.25E+01	2.87E-02	1.15	1.11	1.09
Quota	Min Dist. dal Mare	Media annua	0.707	0.706	2.27E+01	-5.09E-03	-6.44E-02	2.41E-02	1.18	1.16	1.07
Latitudine	Angolo maxslope	Media annua	0.702	0.701	2.64E+02	-5.05E-05	-1.70E-01	2.93E-02	1.11	1.06	1.05
Quota	Openness	Media annua	0.702	0.701	-3.00E+01	-6.82E-03	3.36E+01	2.41E-02	1.06	1.02	1.07
Latitudine	Angolo picco	Media annua	0.697	0.696	2.72E+02	-5.23E-05	-2.04E-01	2.95E-02	1.09	1.04	1.05
Longitudine	Quota	Media annua	0.694	0.693	2.37E+01	-1.88E-05	-7.45E-03	2.75E-02	1.17	1.06	1.21
Latitudine	Pendenza	Media annua	0.694	0.693	2.89E+02	-5.61E-05	-8.66E-02	2.97E-02	1.06	1.01	1.05

Figura 29. Diagrammi diagnostici per regressione 3h con media degli estremi, 3 variabili, area Alpi



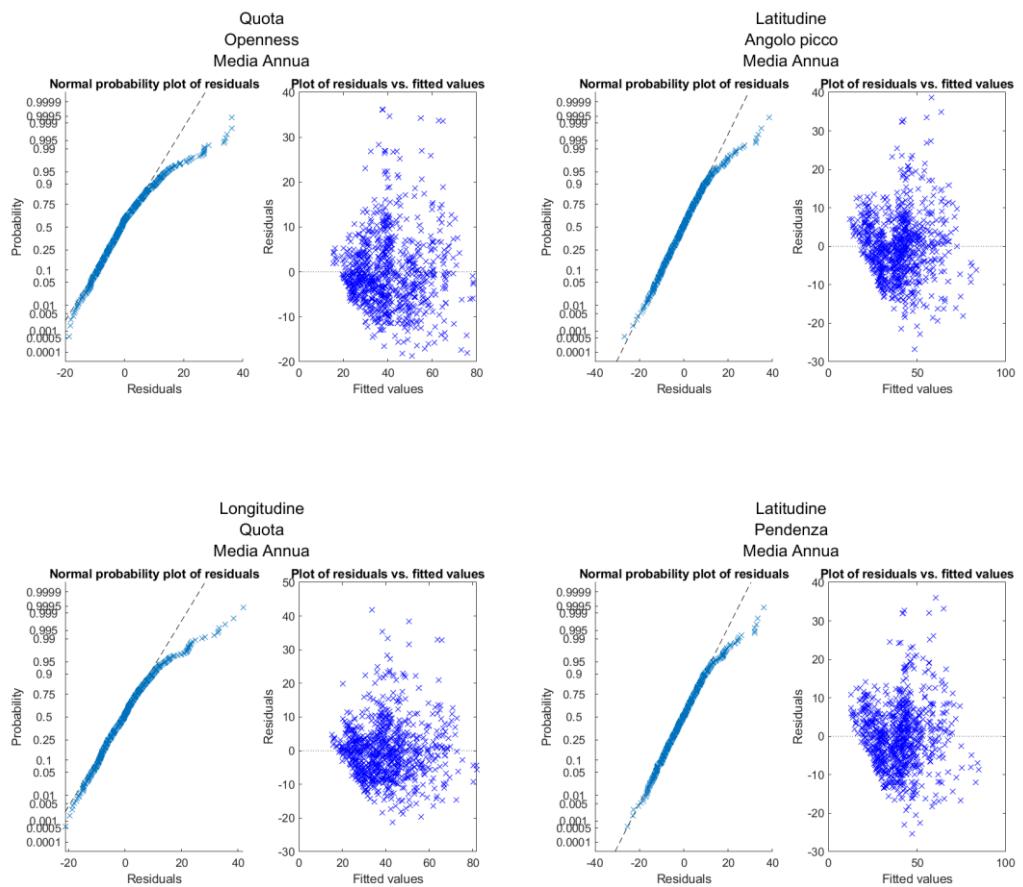
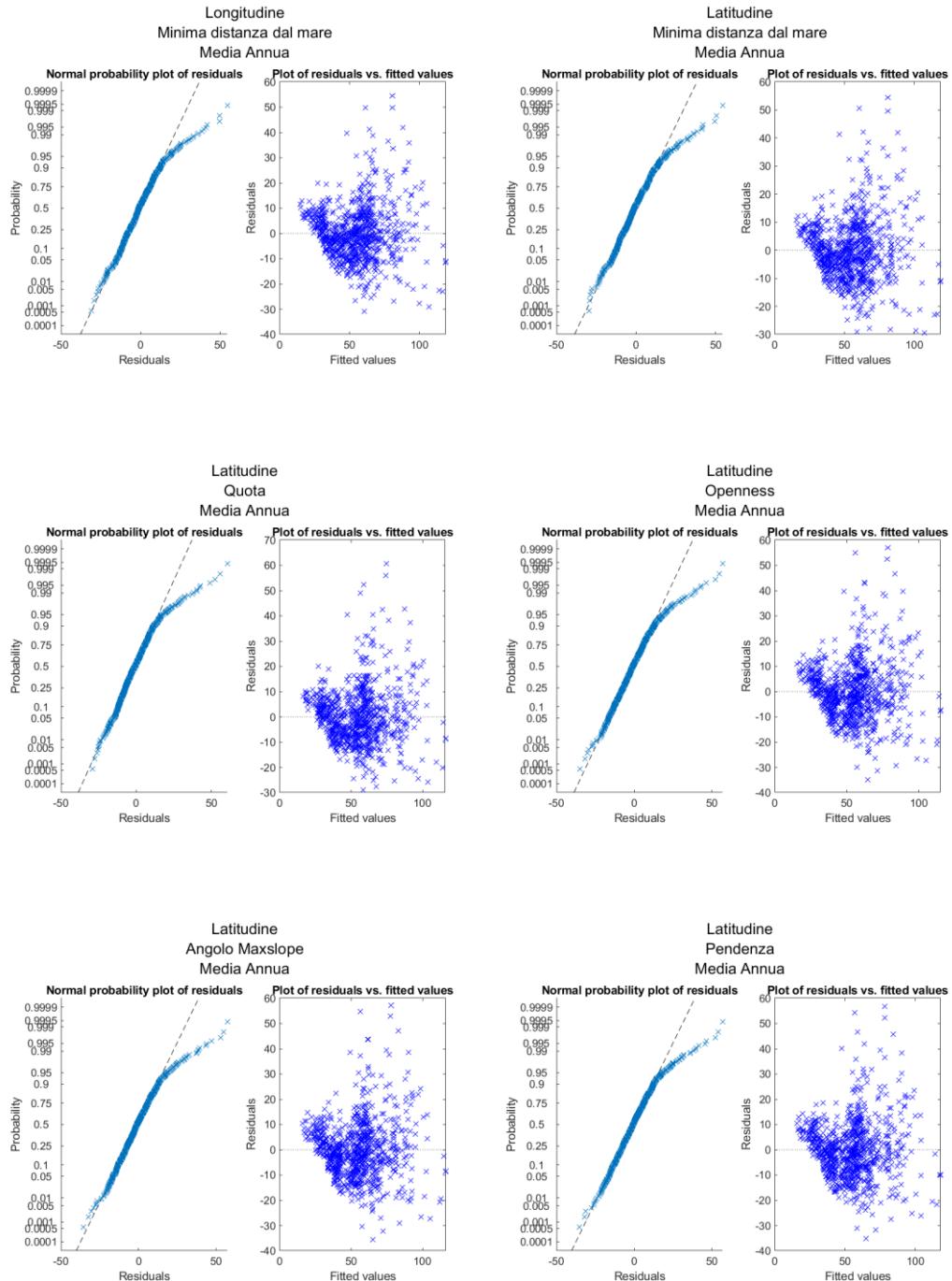


Tabella 28. Regressione 6h con media degli estremi, 3 variabili, area Alpi.

	<b>Variabili</b>		<b>R<sup>2</sup></b>	<b>R<sup>2</sup><sub>adj</sub></b>	<b>β<sub>0</sub></b>	<b>β<sub>1</sub></b>	<b>β<sub>2</sub></b>	<b>β<sub>3</sub></b>	<b>VIF 1</b>	<b>VIF 2</b>	<b>VIF 3</b>
Longitudine	Min Dist. dal Mare	Media annua	0.745	0.744	3.82E+01	-3.05E-05	-1.32E-01	3.99E-02	1.19	1.06	1.18
Latitudine	Min Dist. dal Mare	Media annua	0.733	0.732	2.88E+02	-5.40E-05	-7.14E-02	3.93E-02	1.51	1.49	1.18
Latitudine	Quota	Media annua	0.731	0.730	3.74E+02	-7.18E-05	-5.54E-03	4.00E-02	1.09	1.09	1.13
Latitudine	Openness	Media annua	0.714	0.713	3.56E+02	-7.37E-05	1.54E+01	4.14E-02	1.15	1.11	1.09
Latitudine	Angolo maxslope	Media annua	0.713	0.712	3.88E+02	-7.55E-05	-1.11E-01	4.19E-02	1.11	1.06	1.05
Latitudine	Pendenza	Media annua	0.712	0.711	4.06E+02	-7.93E-05	-7.34E-02	4.22E-02	1.06	1.01	1.05
Quota	Min Dist. dal Mare	Media annua	0.711	0.710	2.81E+01	-4.33E-03	-1.05E-01	3.48E-02	1.18	1.16	1.07
Longitudine	Quota	Media annua	0.680	0.679	2.77E+01	-2.55E-05	-8.08E-03	3.97E-02	1.17	1.06	1.21
Quota	Openness	Media annua	0.669	0.668	-2.85E+01	-7.32E-03	3.33E+01	3.54E-02	1.06	1.02	1.07
Quota	Distanza picco	Media annua	0.660	0.659	2.38E+01	-8.96E-03	-8.43E-04	3.49E-02	1.16	1.13	1.11

Figura 30. Diagrammi diagnostici per regressione 6h con media degli estremi, 3 variabili, area Alpi



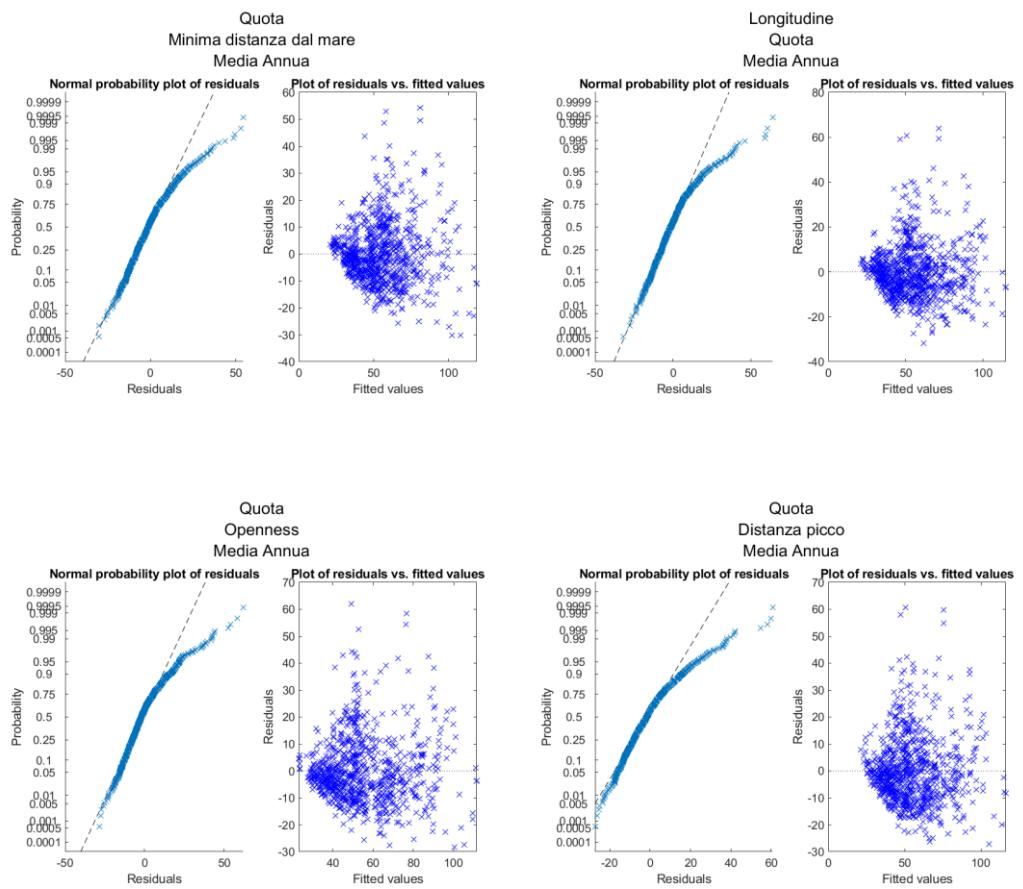
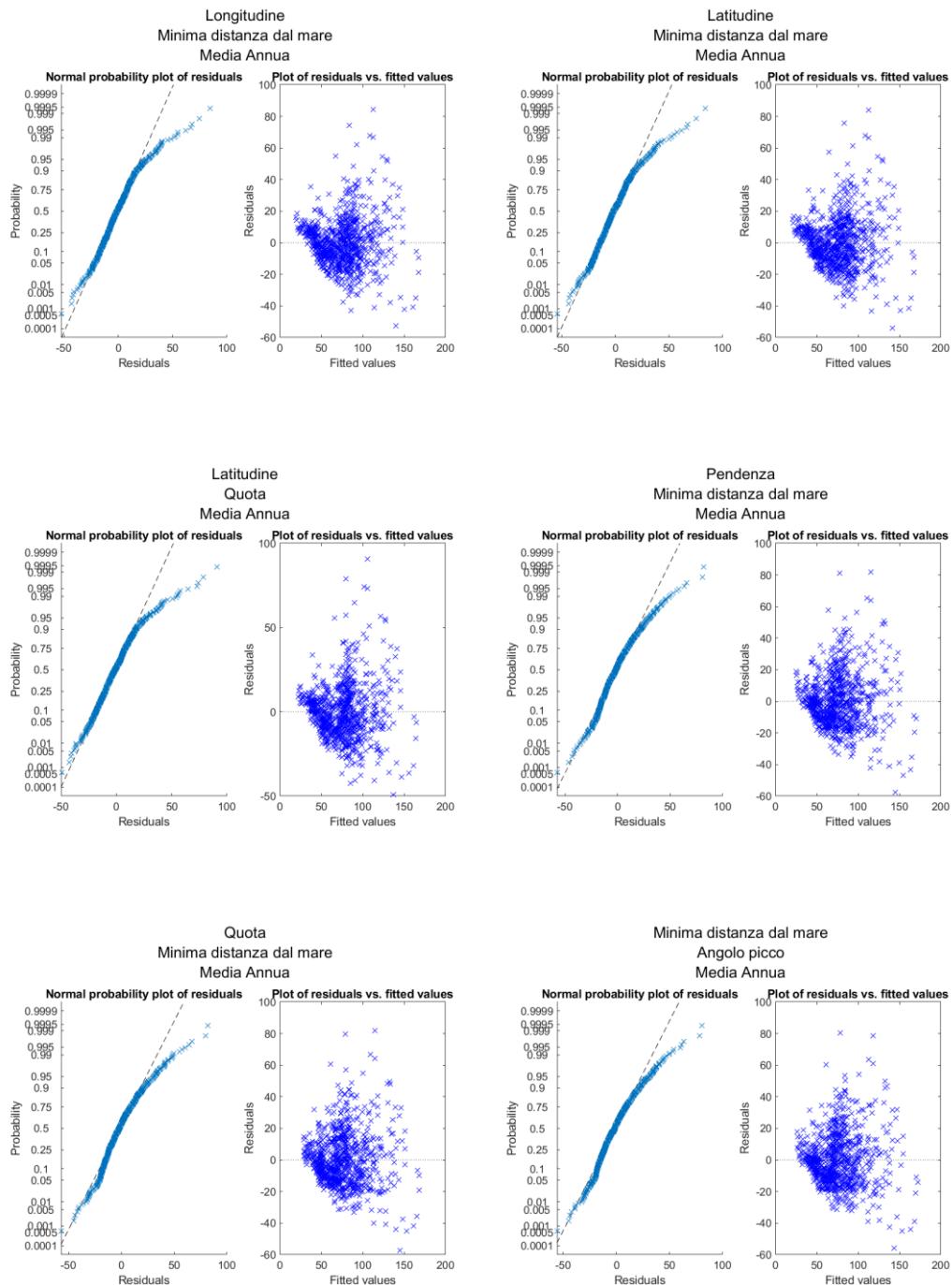


Tabella 29. Regressione 12h con media degli estremi, 3 variabili, area Alpi.

	Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Longitudine	Min Dist. dal Mare	Media annua	0.740	0.739	5.11E+01	-4.48E-05	-1.78E-01	5.75E-02	1.19	1.06	1.18
Latitudine	Min Dist. dal Mare	Media annua	0.726	0.725	4.09E+02	-7.73E-05	-9.07E-02	5.66E-02	1.51	1.49	1.18
Latitudine	Quota	Media annua	0.716	0.715	5.28E+02	-1.03E-04	-4.78E-03	5.83E-02	1.09	1.09	1.13
Pendenza	Min Dist. dal Mare	Media annua	0.695	0.694	2.97E+01	1.52E-01	-1.63E-01	5.13E-02	1.01	1.05	1.04
Quota	Min Dist. dal Mare	Media annua	0.695	0.694	3.36E+01	-3.06E-03	-1.49E-01	5.09E-02	1.18	1.16	1.07
Min Dist. dal Mare	Angolo picco	Media annua	0.695	0.694	2.84E+01	-1.68E-01	2.57E-01	5.13E-02	1.12	1.08	1.04
Longitudine	Quota	Media annua	0.666	0.665	3.35E+01	-3.74E-05	-8.42E-03	5.79E-02	1.17	1.06	1.21
Longitudine	Angolo maxslope	Media annua	0.646	0.645	2.64E+01	-3.52E-05	-2.01E-01	6.01E-02	1.17	1.00	1.17
Longitudine	Distanza picco	Media annua	0.644	0.643	2.38E+01	-3.46E-05	-4.56E-04	5.96E-02	1.17	1.02	1.20
Quota	Distanza picco	Media annua	0.643	0.642	2.69E+01	-9.52E-03	-1.12E-03	5.11E-02	1.16	1.13	1.11

Figura 31. Diagrammi diagnostici per regressione 12h con media degli estremi, 3 variabili, area Alpi



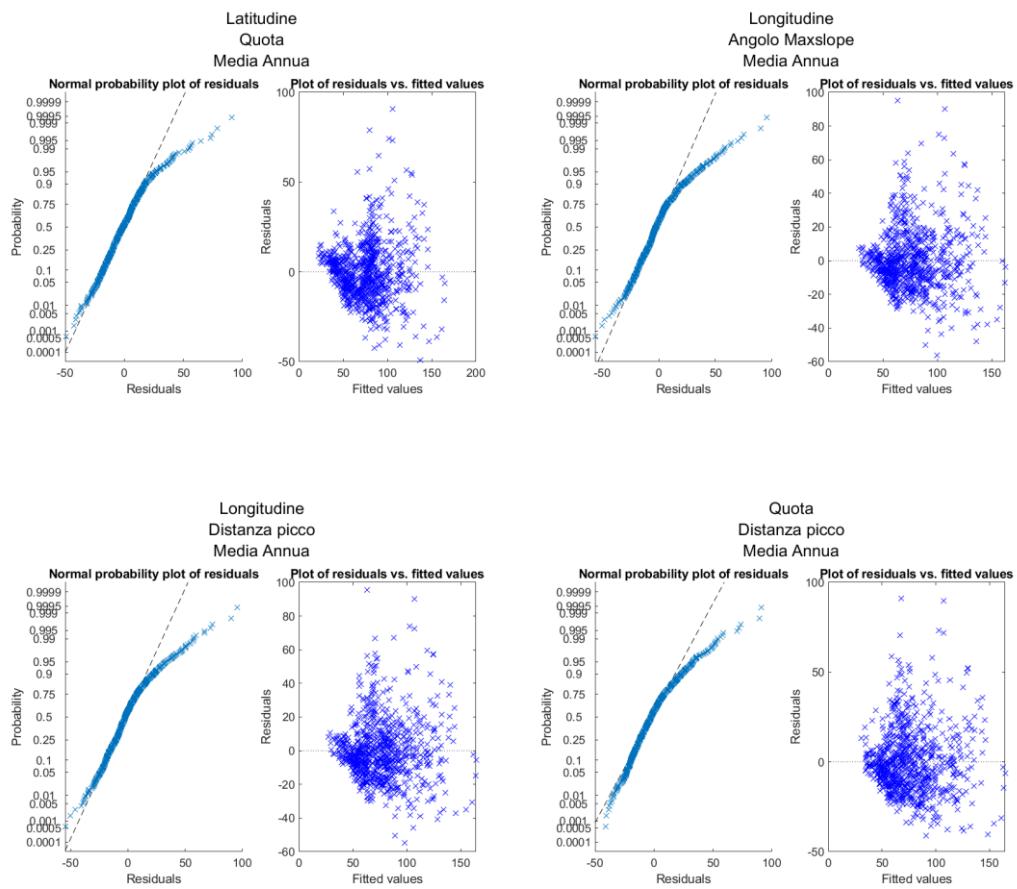
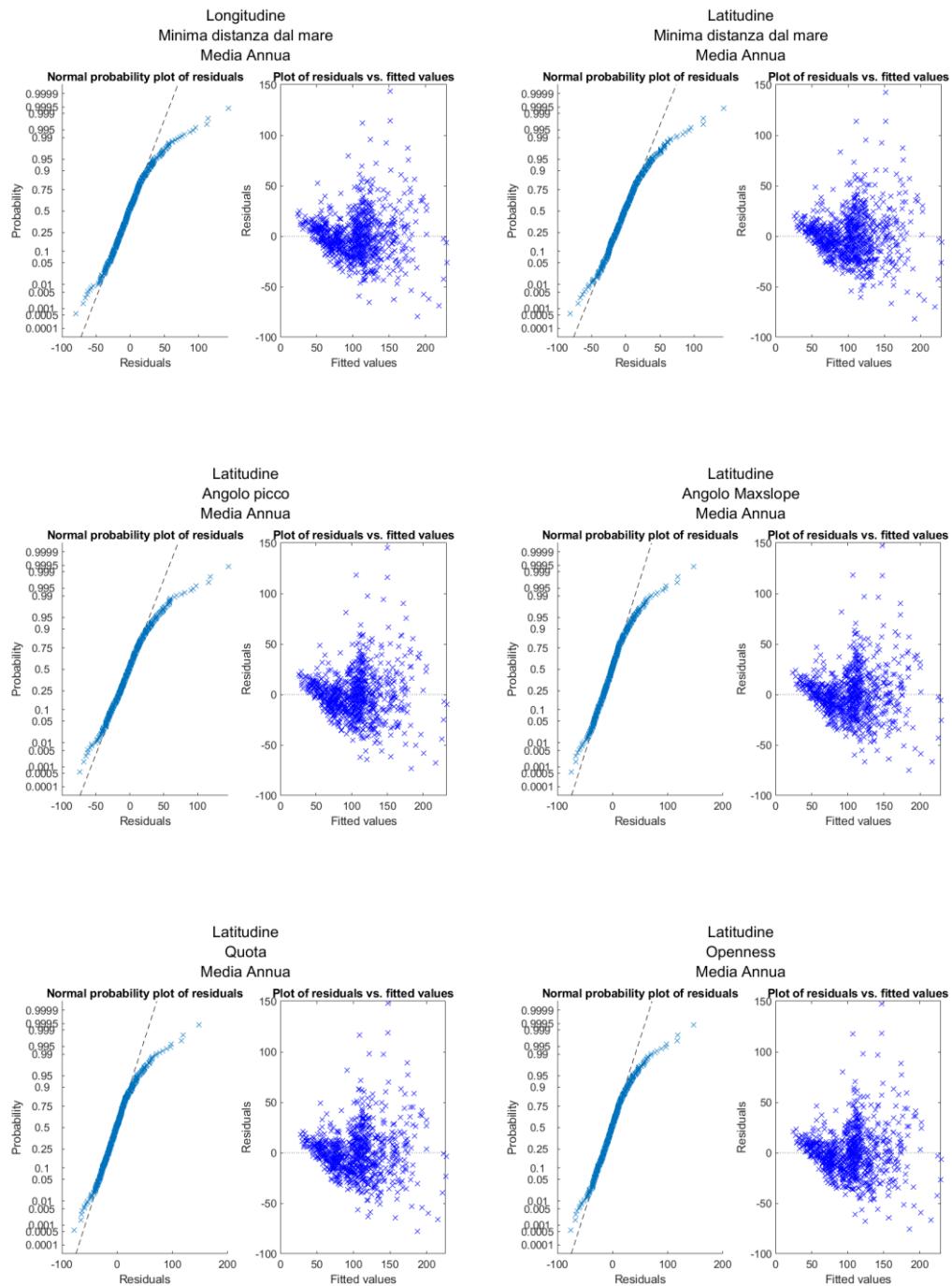
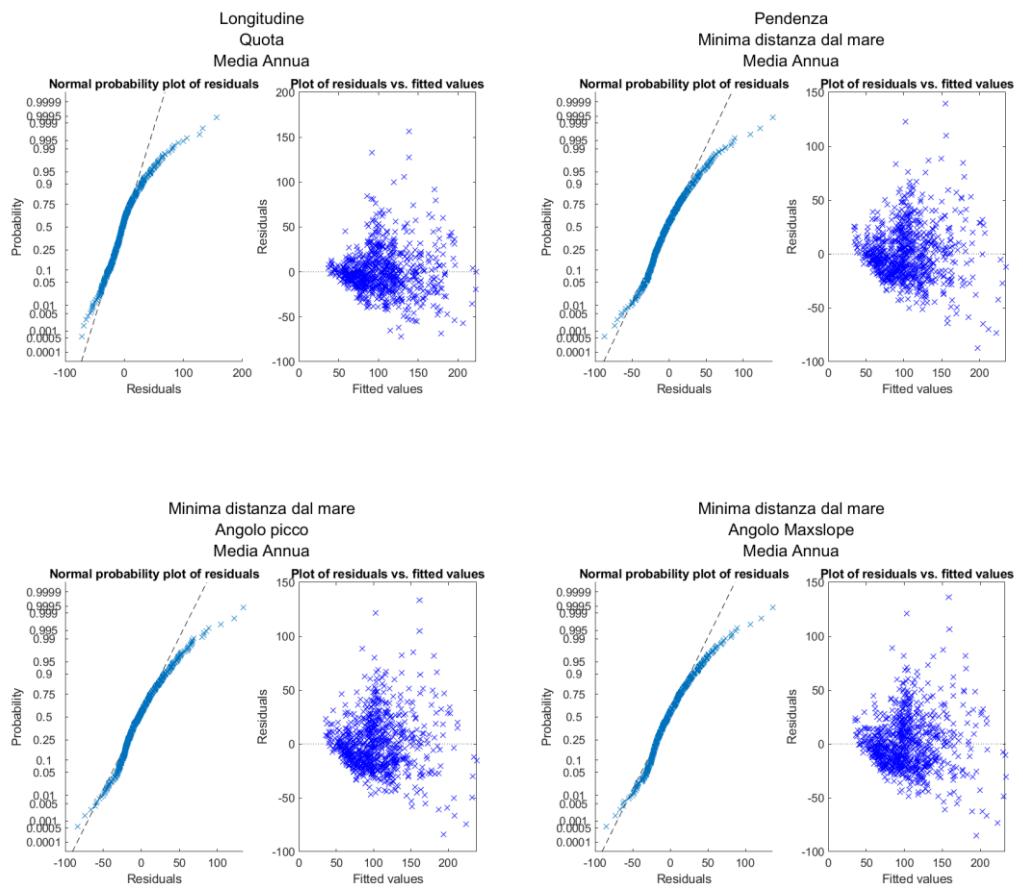


Tabella 30. Regressione 24h con media degli estremi, 3 variabili, area Alpi.

	Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Longitudine	Min Dist. dal Mare	Media annua	0.720	0.719	7.00E+01	-7.43E-05	-2.19E-01	8.19E-02	1.19	1.06	1.18
Latitudine	Min Dist. dal Mare	Media annua	0.701	0.700	6.68E+02	-1.29E-04	-7.27E-02	8.04E-02	1.51	1.49	1.18
Latitudine	Angolo picco	Media annua	0.700	0.699	8.06E+02	-1.60E-04	4.40E-01	8.33E-02	1.09	1.04	1.05
Latitudine	Angolo maxslope	Media annua	0.698	0.696	8.04E+02	-1.59E-04	1.95E-01	8.35E-02	1.11	1.06	1.05
Latitudine	Quota	Media annua	0.697	0.696	7.66E+02	-1.50E-04	-3.45E-03	8.20E-02	1.09	1.09	1.13
Latitudine	Openness	Media annua	0.697	0.696	8.38E+02	-1.60E-04	-1.91E+01	8.40E-02	1.15	1.11	1.09
Longitudine	Quota	Media annua	0.659	0.658	4.63E+01	-6.49E-05	-8.97E-03	8.28E-02	1.17	1.06	1.21
Pendenza	Min Dist. dal Mare	Media annua	0.658	0.657	3.39E+01	2.97E-01	-1.95E-01	7.16E-02	1.01	1.05	1.04
Min Dist. dal Mare	Angolo picco	Media annua	0.658	0.657	3.16E+01	-2.04E-01	4.99E-01	7.15E-02	1.12	1.08	1.04
Min Dist. dal Mare	Angolo maxslope	Media annua	0.655	0.654	3.31E+01	-2.03E-01	2.32E-01	7.18E-02	1.16	1.12	1.03

Figura 32. Diagrammi diagnostici per regressione 24h con media degli estremi, 3 variabili, area Alpi





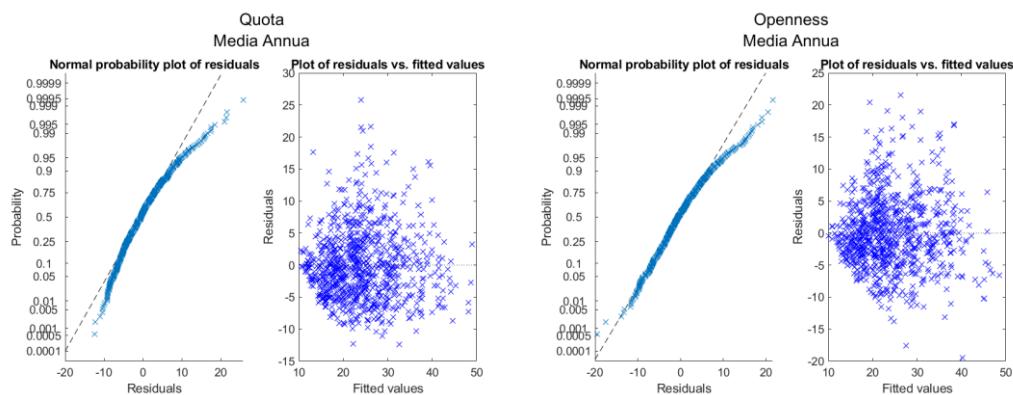
## **Regressioni con la mediana delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h**

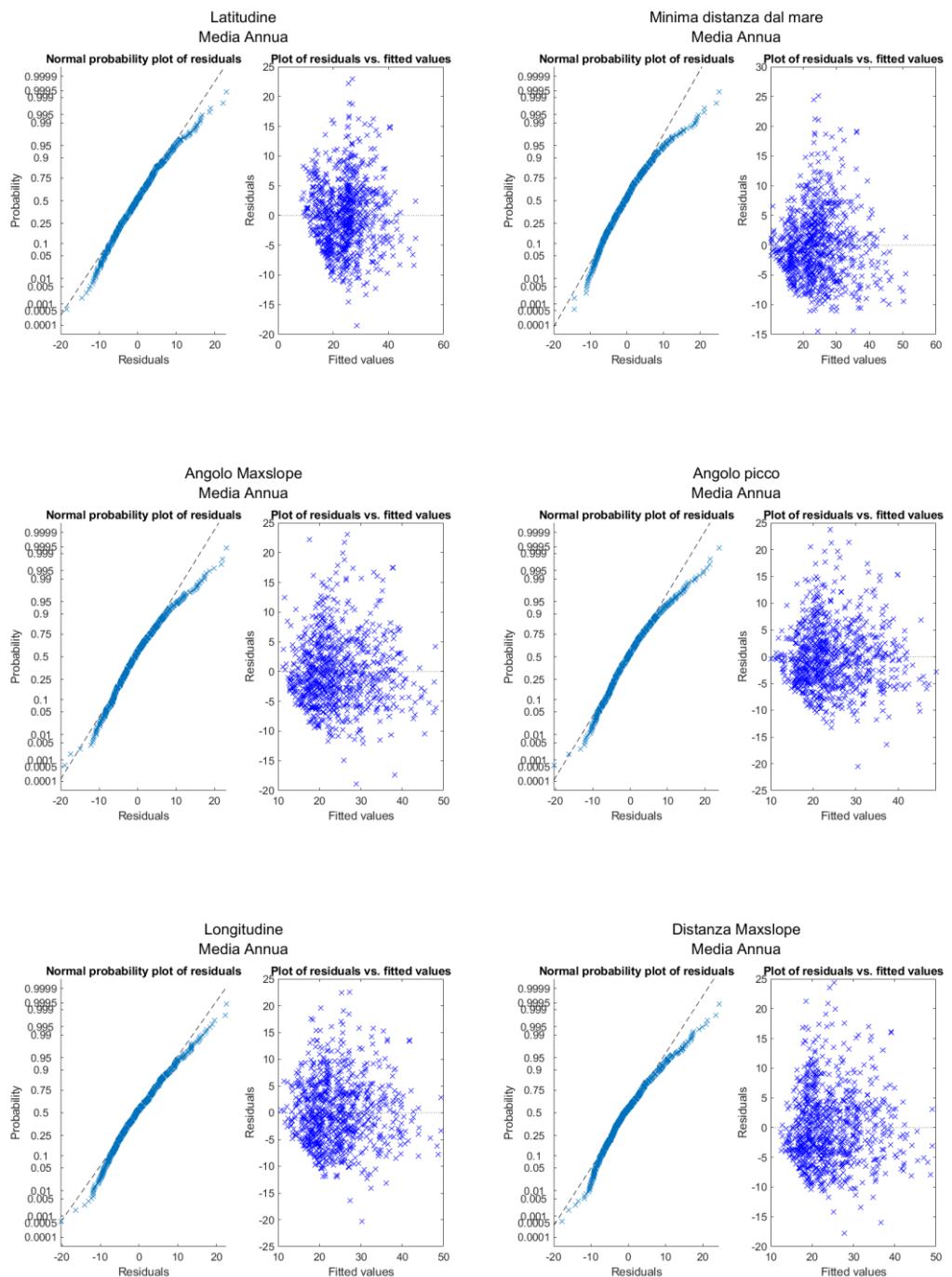
Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la mediana degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l'area Alpina. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 31. Regressione 1h con mediana degli estremi, 2 variabili, area Alpi.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Quota	Media Annua	0.644	0.643	1.18E+01	-5.30E-03	1.42E-02
Openness	Media Annua	0.632	0.632	-3.68E+01	3.06E+01	1.50E-02
Latitudine	Media Annua	0.616	0.616	1.53E+02	-2.95E-05	1.71E-02
Minima distanza dal mare	Media Annua	0.609	0.609	1.13E+01	-4.55E-02	1.48E-02
Angolo Maxslope	Media Annua	0.604	0.603	1.05E+01	-2.33E-01	1.57E-02
Angolo picco	Media Annua	0.592	0.591	9.70E+00	-3.31E-01	1.60E-02
Longitudine	Media Annua	0.557	0.556	7.85E+00	-8.11E-06	1.70E-02
Distanza Maxslope	Media Annua	0.549	0.548	4.01E+00	4.39E-04	1.58E-02
Quota	Openness	0.357	0.356	-1.79E+01	-7.23E-03	3.52E+01
Quota	Minima distanza dal mare	0.287	0.285	3.51E+01	-6.23E-03	-4.21E-02

*Figura 33. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 2 variabili, area Alpi*





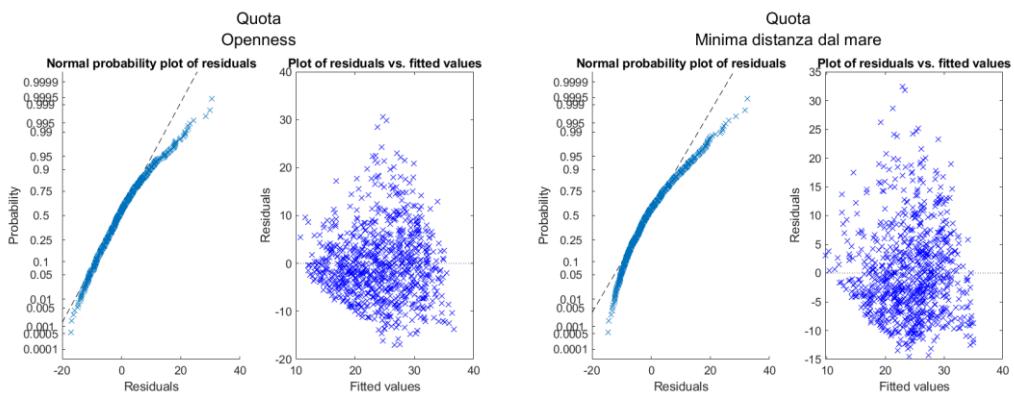
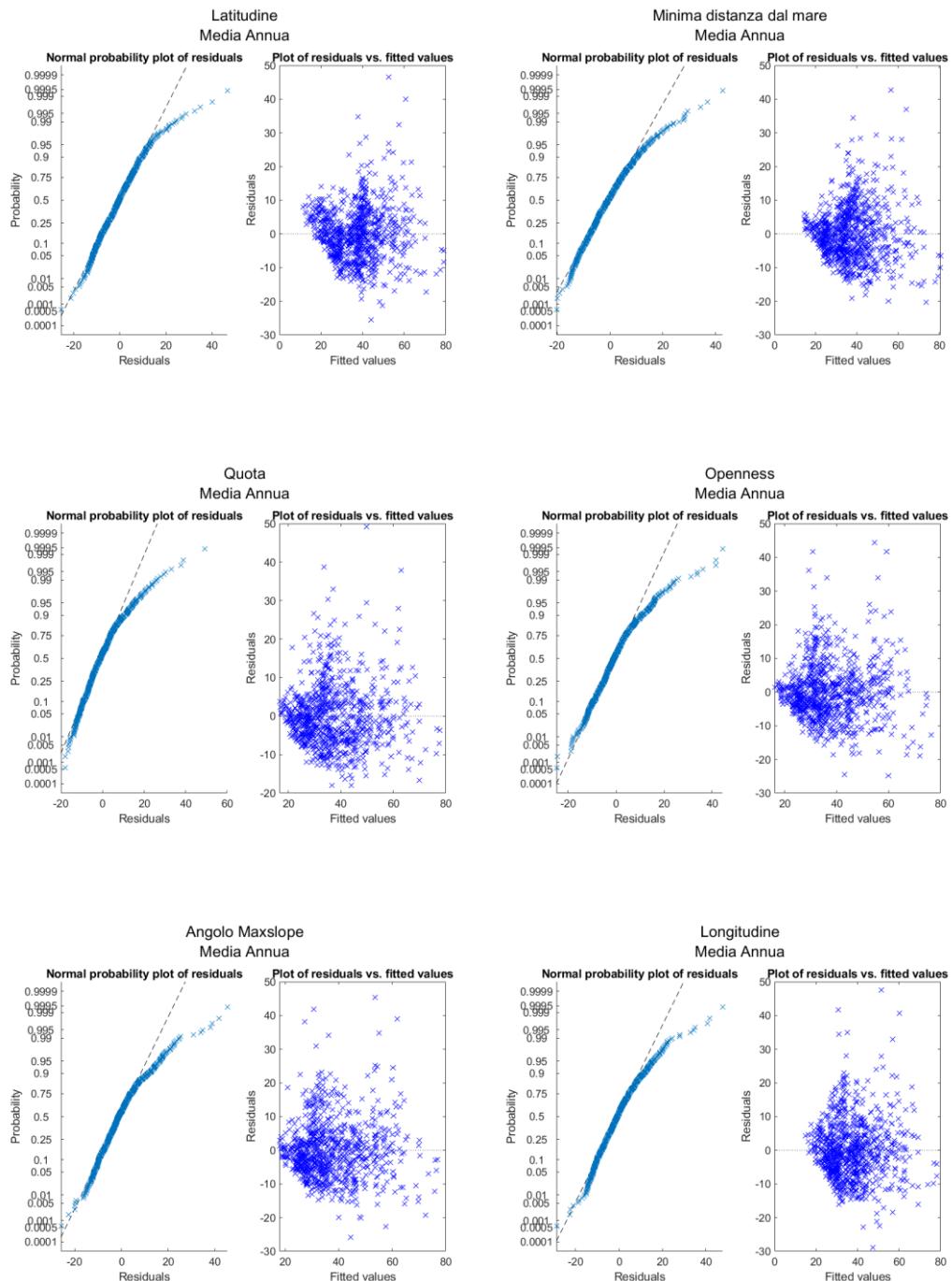


Tabella 32. Regressione 3h con mediana degli estremi, 2 variabili, area Alpi.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Latitudine	Media Annua	0.686	0.685	2.49E+02	-4.87E-05	2.79E-02
Minima distanza dal mare	Media Annua	0.674	0.673	1.61E+01	-7.32E-02	2.41E-02
Quota	Media Annua	0.663	0.662	1.41E+01	-6.46E-03	2.38E-02
Openness	Media Annua	0.644	0.644	-3.98E+01	3.33E+01	2.49E-02
Angolo Maxslope	Media Annua	0.631	0.630	1.17E+01	-2.55E-01	2.56E-02
Longitudine	Media Annua	0.621	0.621	1.11E+01	-1.45E-05	2.78E-02
Angolo picco	Media Annua	0.616	0.615	9.97E+00	-3.00E-01	2.59E-02
Distanza Maxslope	Media Annua	0.602	0.601	4.80E+00	4.03E-04	2.57E-02
Quota	Minima distanza dal mare	0.255	0.254	5.37E+01	-7.86E-03	-7.65E-02
Quota	Distanza picco	0.244	0.243	5.43E+01	-1.21E-02	-1.24E-03

Figura 34. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 2 variabili, area Alpi



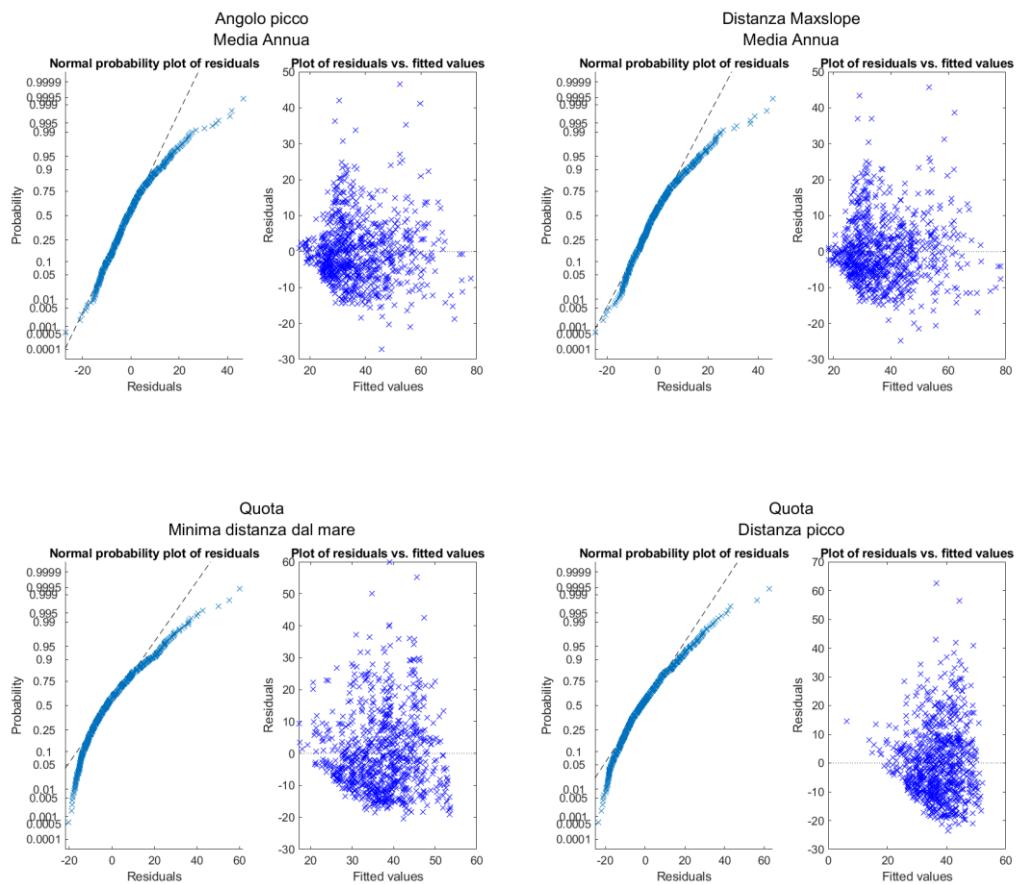
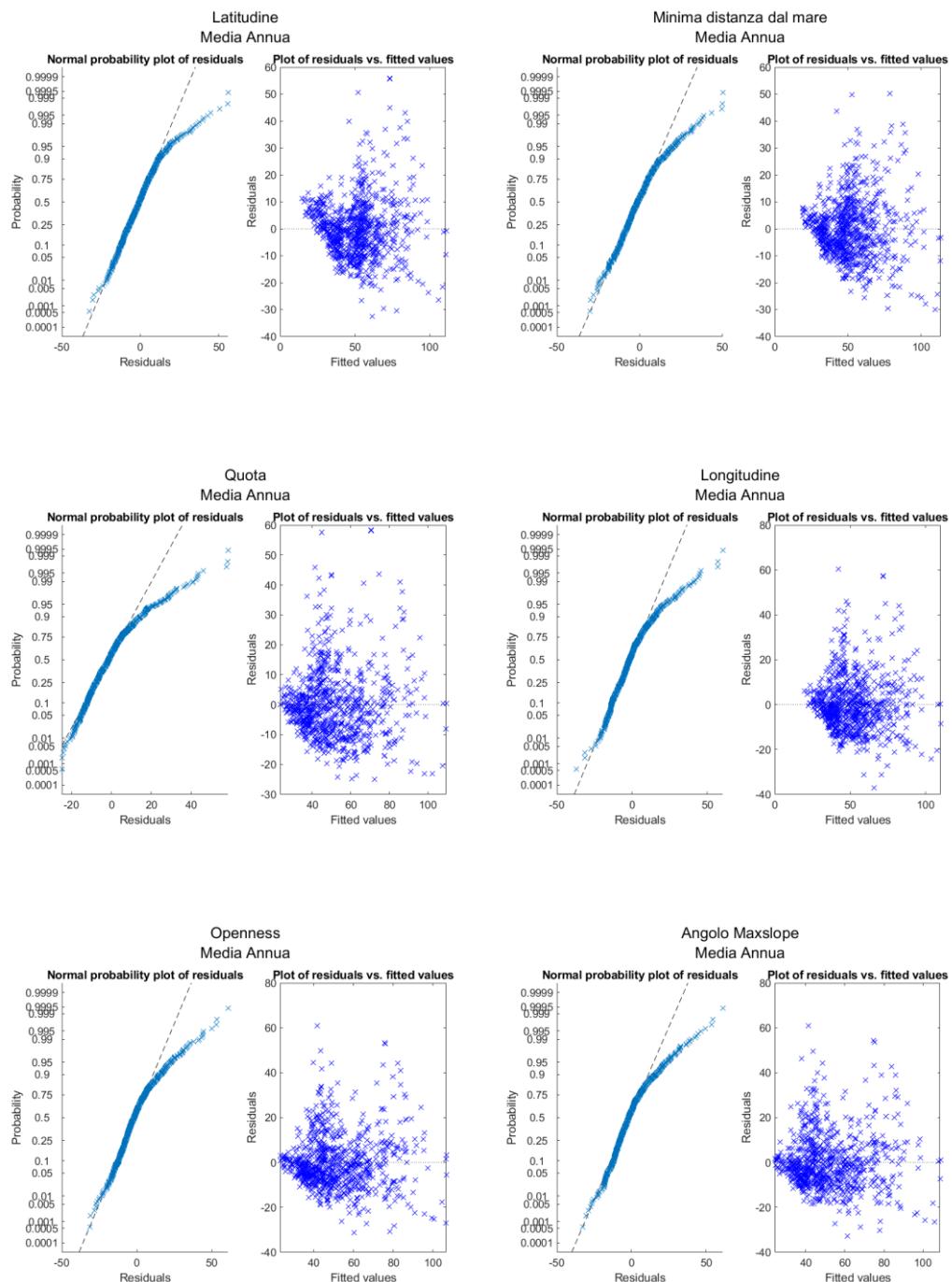


Tabella 33. Regressione 6h con mediana degli estremi, 2 variabili, area Alpi.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Latitudine	Media Annua	0.703	0.703	3.46E+02	-6.78E-05	3.98E-02
Minima distanza dal mare	Media Annua	0.695	0.694	2.12E+01	-1.04E-01	3.44E-02
Quota	Media Annua	0.654	0.653	1.52E+01	-6.85E-03	3.46E-02
Longitudine	Media Annua	0.640	0.639	1.38E+01	-2.01E-05	3.96E-02
Openness	Media Annua	0.638	0.637	-3.61E+01	3.10E+01	3.59E-02
Angolo Maxslope	Media Annua	0.631	0.630	1.18E+01	-2.34E-01	3.66E-02
Angolo picco	Media Annua	0.622	0.621	9.34E+00	-2.19E-01	3.68E-02
Quota	Minima distanza dal mare	0.226	0.225	7.35E+01	-8.68E-03	-1.19E-01
Quota	Distanza picco	0.199	0.198	7.35E+01	-1.50E-02	-1.75E-03
Minima distanza dal mare	Distanza picco	0.184	0.182	7.22E+01	-1.48E-01	-7.67E-04

Figura 35. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 2 variabili, area Alpi



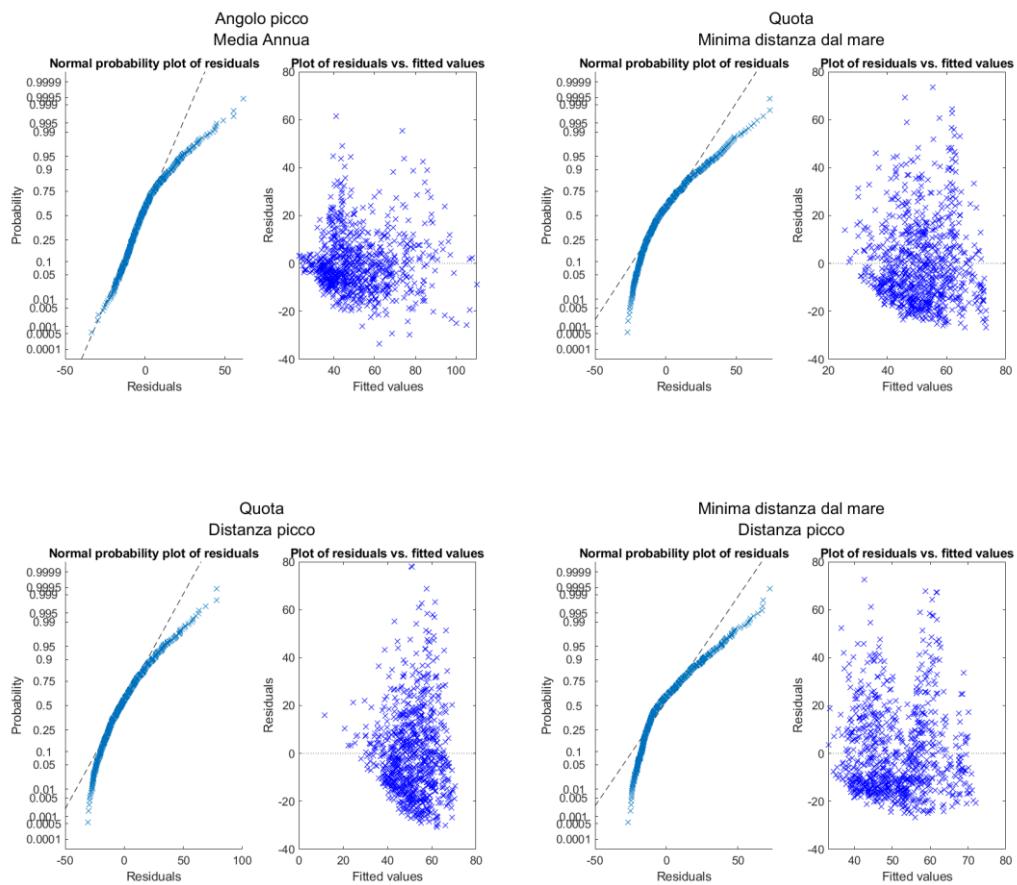
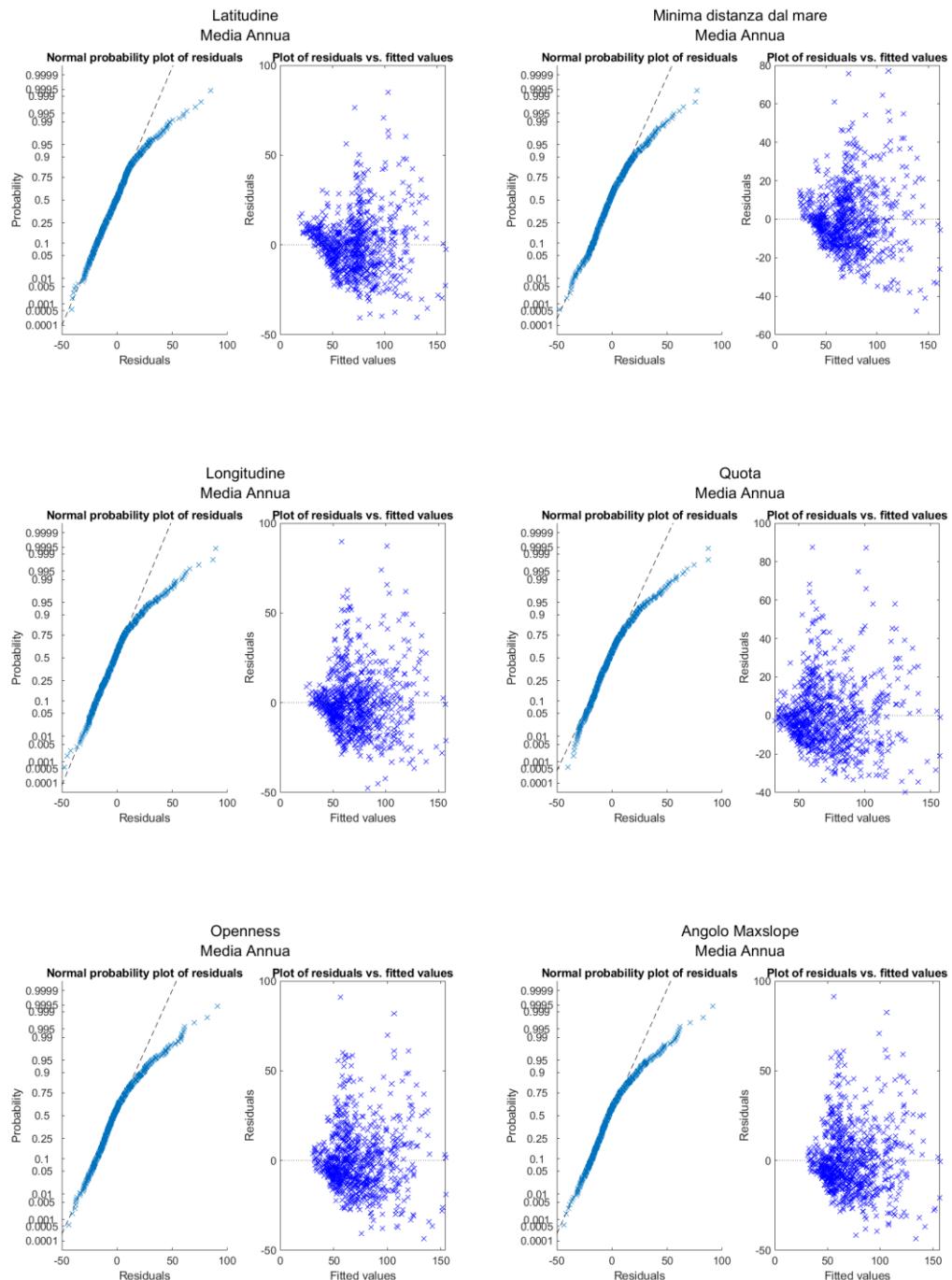


Tabella 34. Regressione 12h con mediana degli estremi, 2 variabili, area Alpi.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Latitudine	Media Annua	0.705	0.705	4.75E+02	-9.37E-05	5.79E-02
Minima distanza dal mare	Media Annua	0.695	0.695	2.58E+01	-1.41E-01	5.05E-02
Longitudine	Media Annua	0.651	0.650	1.67E+01	-2.98E-05	5.79E-02
Quota	Media Annua	0.647	0.646	1.49E+01	-7.28E-03	5.14E-02
Openness	Media Annua	0.635	0.634	-3.14E+01	2.70E+01	5.30E-02
Angolo Maxslope	Media Annua	0.631	0.630	9.77E+00	-1.84E-01	5.36E-02
Distanza picco	Media Annua	0.630	0.629	8.25E+00	-5.28E-04	5.32E-02
Quota	Minima distanza dal mare	0.193	0.191	1.01E+02	-1.01E-02	-1.72E-01
Minima distanza dal mare	Distanza picco	0.175	0.173	1.01E+02	-2.04E-01	-1.30E-03
Minima distanza dal mare	Angolo picco	0.170	0.168	8.97E+01	-2.27E-01	5.34E-01

Figura 36. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 2 variabili, area Alpi



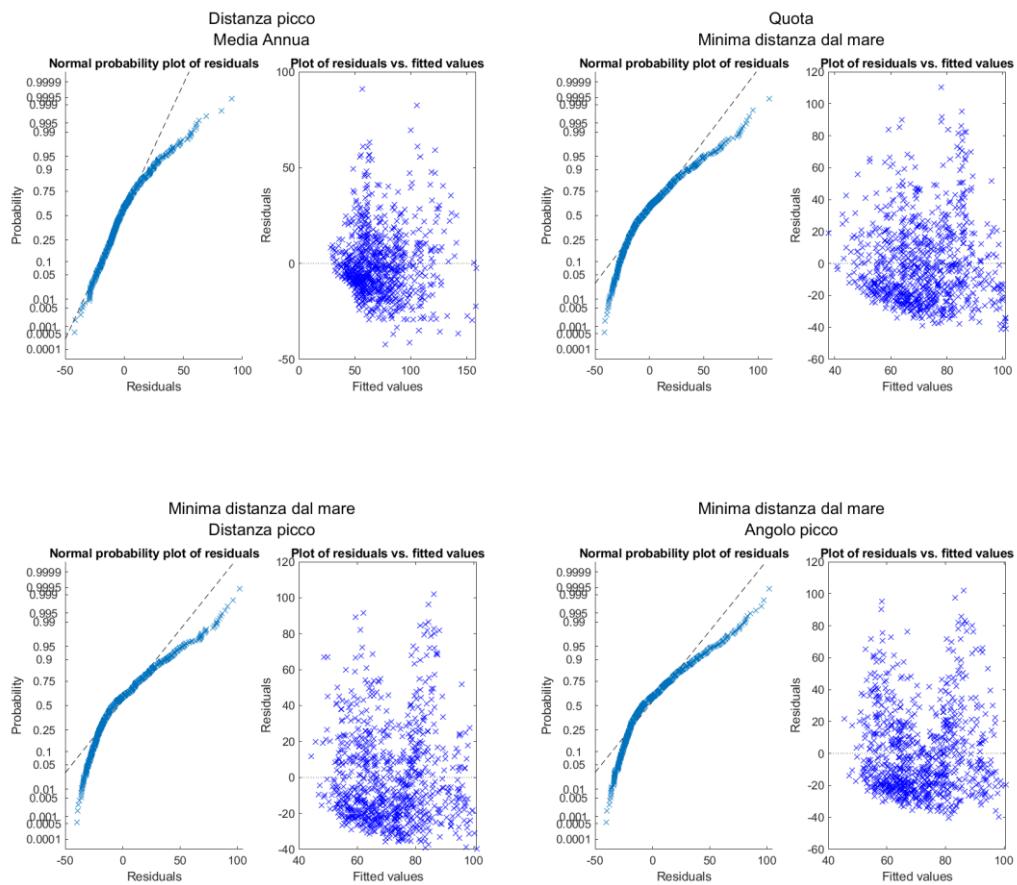
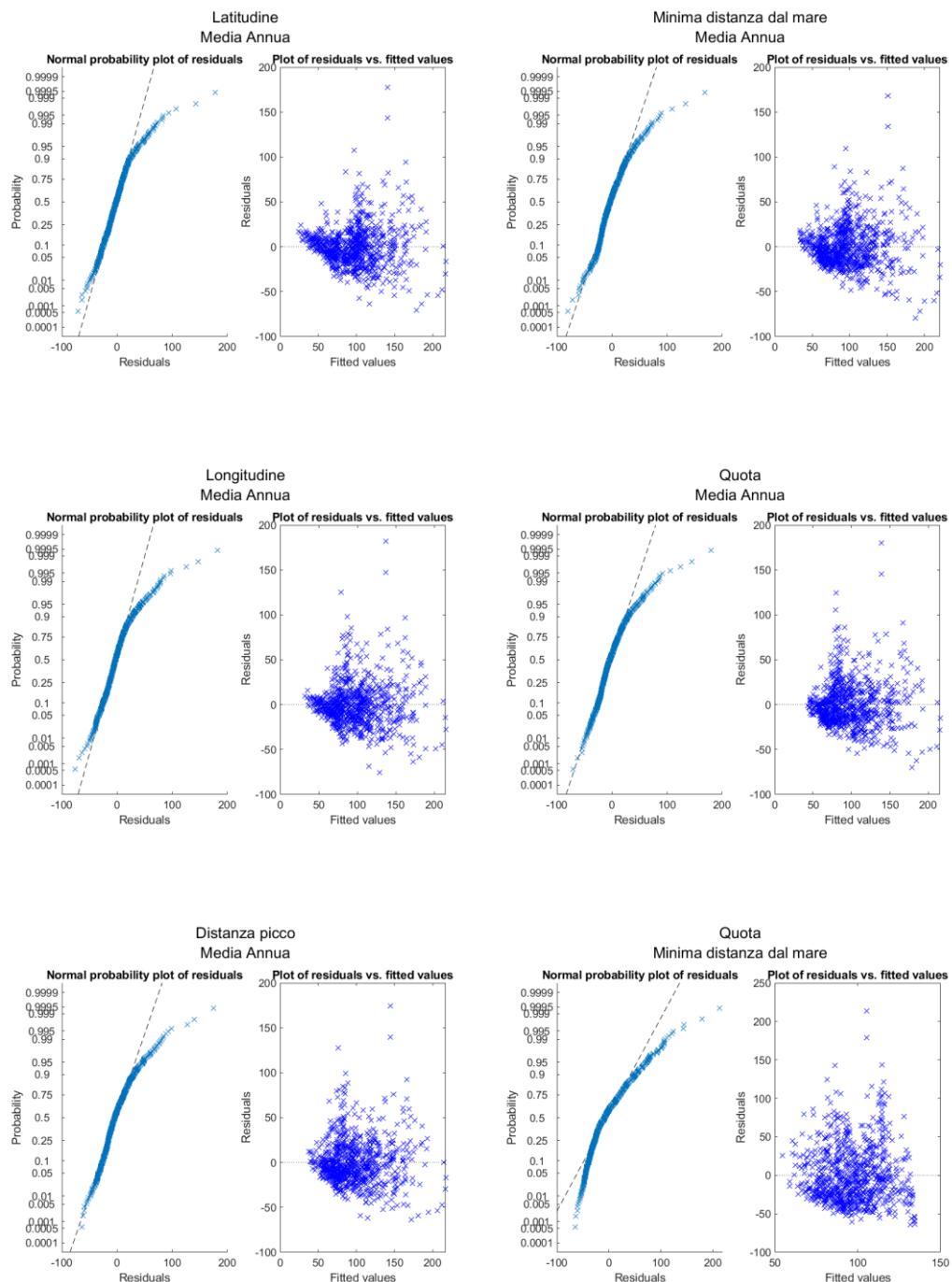


Tabella 35. Regressione 24h con mediana degli estremi, 2 variabili, area Alpi.

Variabili		$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$
Latitudine	Media Annua	0.685	0.684	6.62E+02	-1.31E-04	7.99E-02
Minima distanza dal mare	Media Annua	0.658	0.657	3.06E+01	-1.71E-01	7.02E-02
Longitudine	Media Annua	0.641	0.641	2.51E+01	-5.03E-05	8.12E-02
Quota	Media Annua	0.619	0.618	1.60E+01	-7.78E-03	7.16E-02
Distanza picco	Media Annua	0.611	0.610	1.02E+01	-7.96E-04	7.32E-02
Quota	Minima distanza dal mare	0.156	0.154	1.35E+02	-1.24E-02	-2.20E-01
Minima distanza dal mare	Distanza picco	0.148	0.146	1.36E+02	-2.58E-01	-1.90E-03
Minima distanza dal mare	Angolo picco	0.145	0.143	1.18E+02	-2.94E-01	8.50E-01
Quota	Distanza picco	0.144	0.142	1.36E+02	-2.45E-02	-3.54E-03
Pendenza	Minima distanza dal mare	0.141	0.139	1.23E+02	4.17E-01	-2.76E-01

Figura 37. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 2 variabili, area Alpi



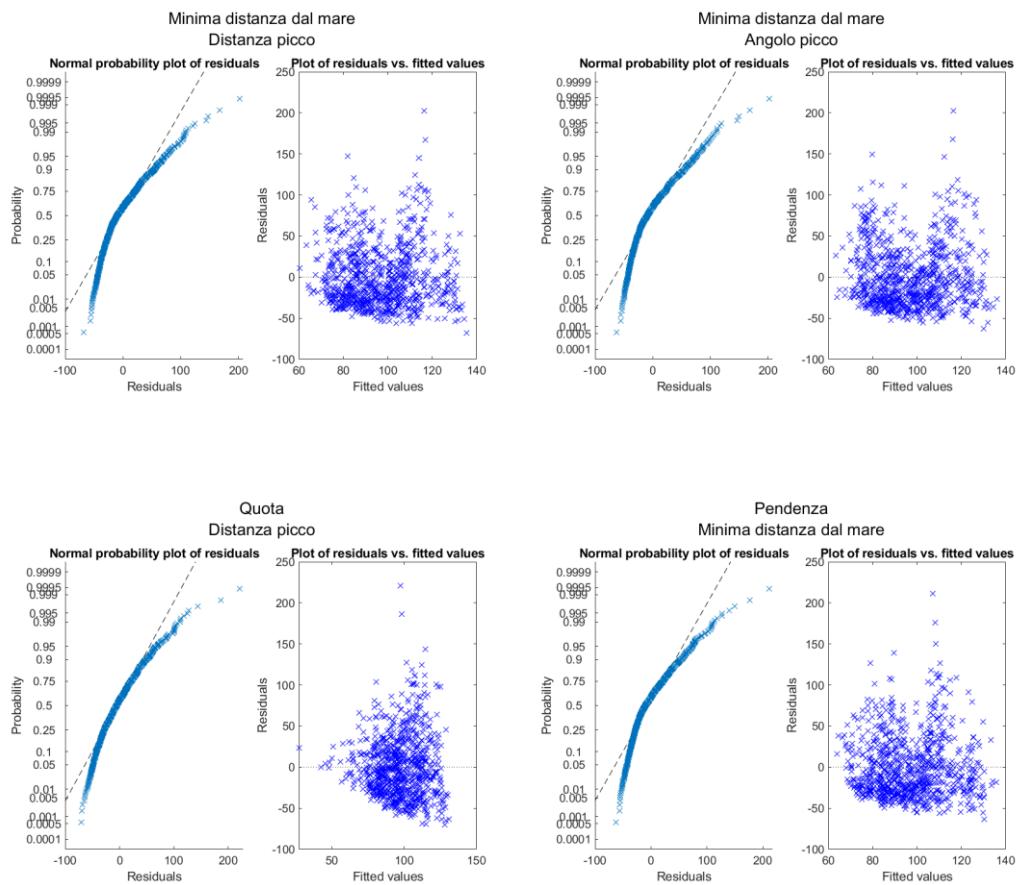
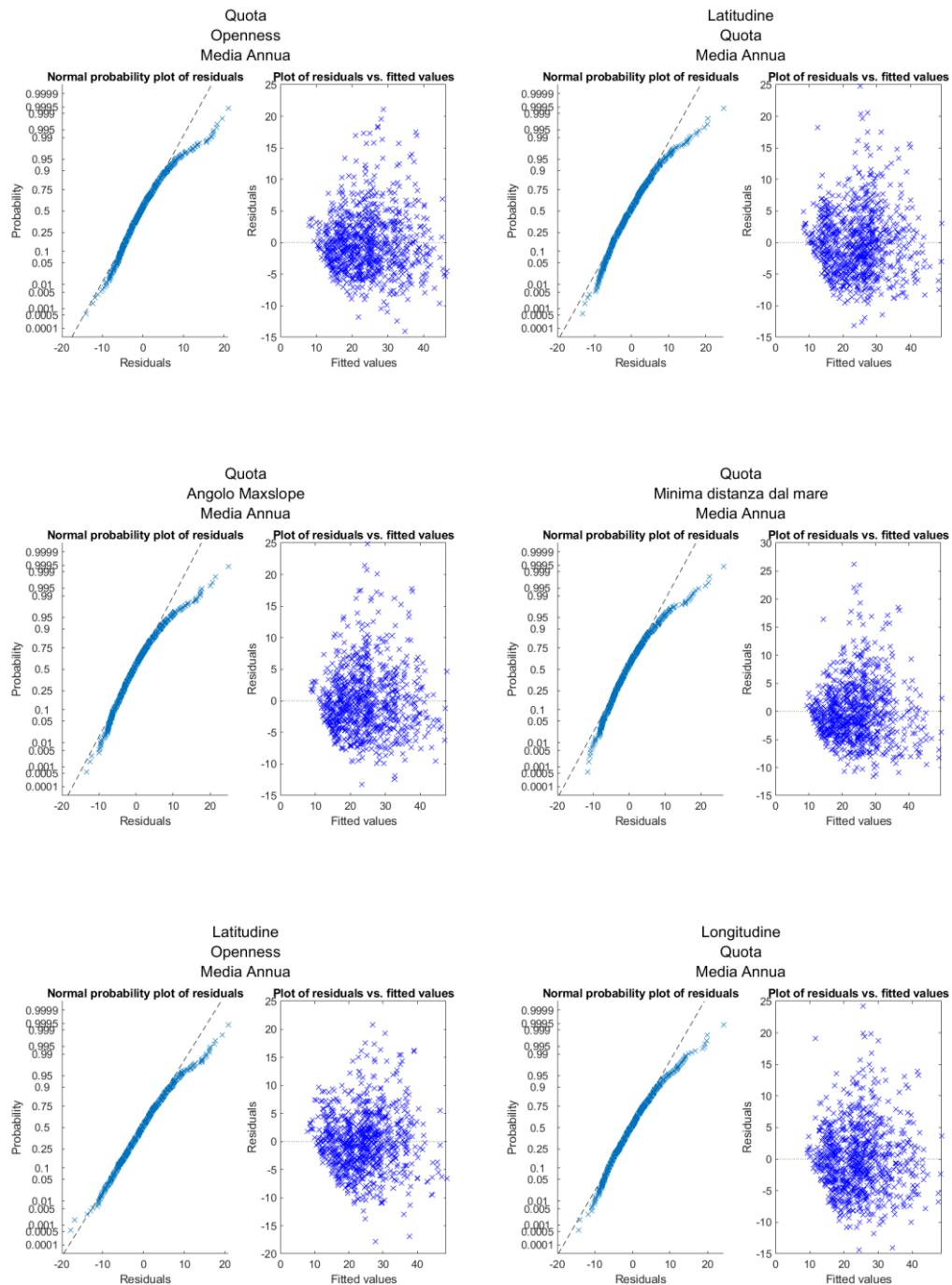


Tabella 36. Regressione Ih con mediana degli estremi, 3 variabili, area Alpi.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Quota	Openness	Media Annua	0.727	0.726	-2.79E+01	-5.05E-03	2.90E+01	1.35E-02
Latitudine	Quota	Media Annua	0.693	0.691	1.31E+02	-2.40E-05	-4.61E-03	1.55E-02
Quota	Angolo Maxslope	Media Annua	0.689	0.688	1.60E+01	-4.82E-03	-1.96E-01	1.42E-02
Quota	Minima distanza dal mare	Media Annua	0.672	0.671	1.50E+01	-4.34E-03	-3.06E-02	1.38E-02
Latitudine	Openness	Media Annua	0.671	0.670	8.14E+01	-2.19E-05	2.45E+01	1.62E-02
Longitudine	Quota	Media Annua	0.667	0.666	1.57E+01	-9.54E-06	-5.48E-03	1.55E-02
Quota	Angolo picco	Media Annua	0.664	0.662	1.41E+01	-4.60E-03	-2.14E-01	1.45E-02
Minima distanza dal mare	Openness	Media Annua	0.661	0.660	-2.37E+01	-3.09E-02	2.42E+01	1.45E-02
Latitudine	Angolo Maxslope	Media Annua	0.655	0.654	1.33E+02	-2.46E-05	-1.84E-01	1.68E-02
Quota	Distanza picco	Media Annua	0.651	0.650	1.40E+01	-5.75E-03	-2.81E-04	1.38E-02

Figura 38. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 3 variabili, area Alpi



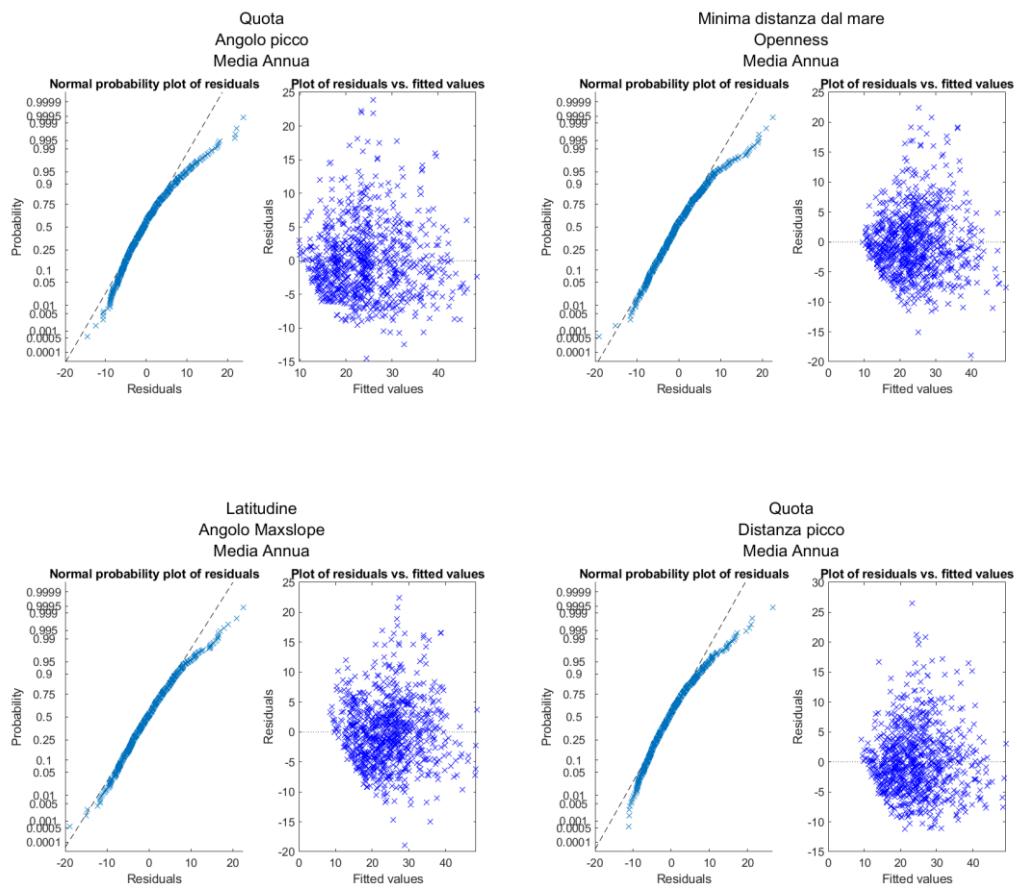
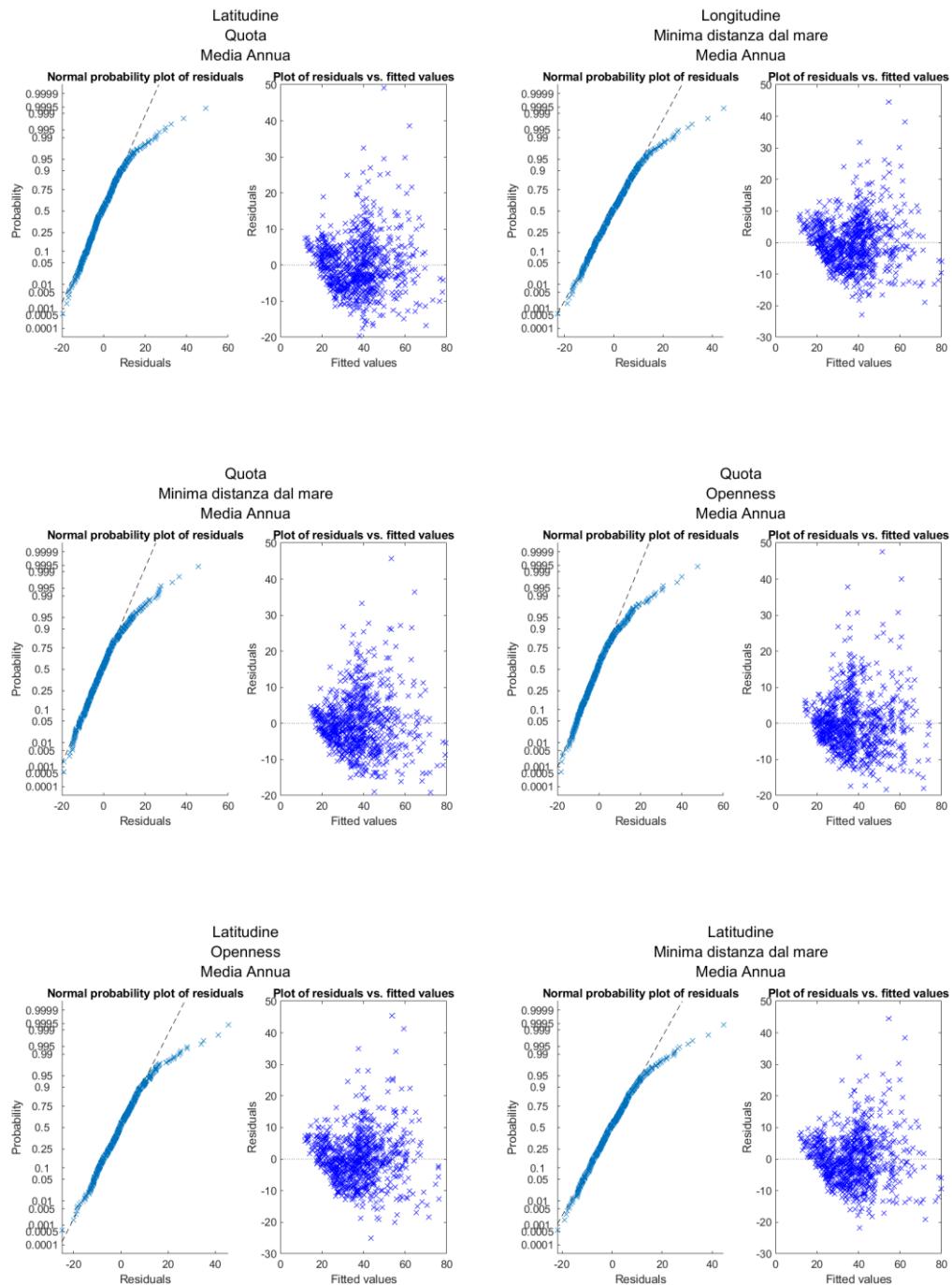


Tabella 37. Regressione 3h con mediana degli estremi, 3 variabili, area Alpi.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Latitudine	Quota	Media Annua	0.727	0.726	2.25E+02	-4.23E-05	-5.25E-03	2.60E-02
Longitudine	Minima distanza dal mare	Media Annua	0.712	0.711	2.46E+01	-1.89E-05	-8.11E-02	2.66E-02
Quota	Minima distanza dal mare	Media Annua	0.704	0.703	2.00E+01	-4.68E-03	-5.71E-02	2.30E-02
Quota	Openness	Media Annua	0.704	0.703	-2.89E+01	-6.20E-03	3.13E+01	2.30E-02
Latitudine	Openness	Media Annua	0.704	0.703	1.86E+02	-4.19E-05	2.18E+01	2.71E-02
Latitudine	Minima distanza dal mare	Media Annua	0.704	0.703	1.82E+02	-3.40E-05	-4.28E-02	2.63E-02
Latitudine	Angolo Maxslope	Media Annua	0.699	0.698	2.31E+02	-4.42E-05	-1.67E-01	2.77E-02
Latitudine	Angolo picco	Media Annua	0.692	0.691	2.40E+02	-4.61E-05	-1.82E-01	2.79E-02
Longitudine	Quota	Media Annua	0.692	0.691	2.08E+01	-1.63E-05	-6.76E-03	2.60E-02
Minima distanza dal mare	Openness	Media Annua	0.690	0.689	-1.42E+01	-6.06E-02	2.09E+01	2.38E-02

Figura 39. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 3 variabili, area Alpi



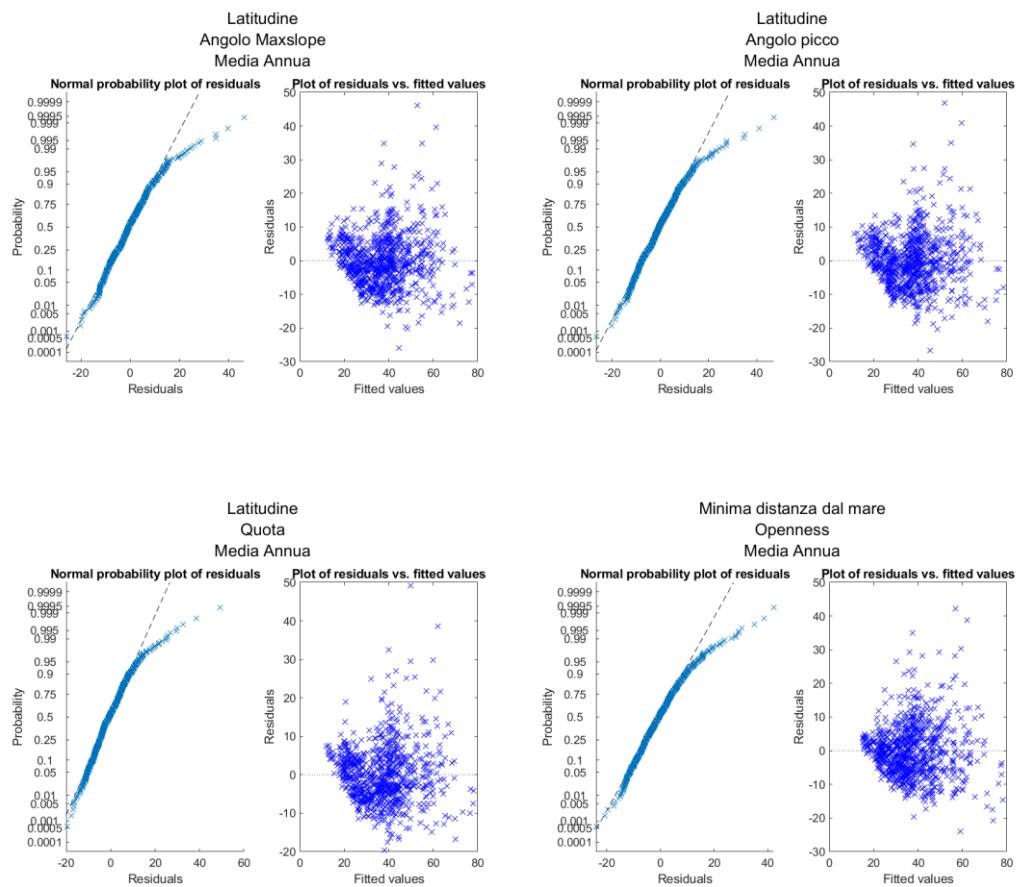
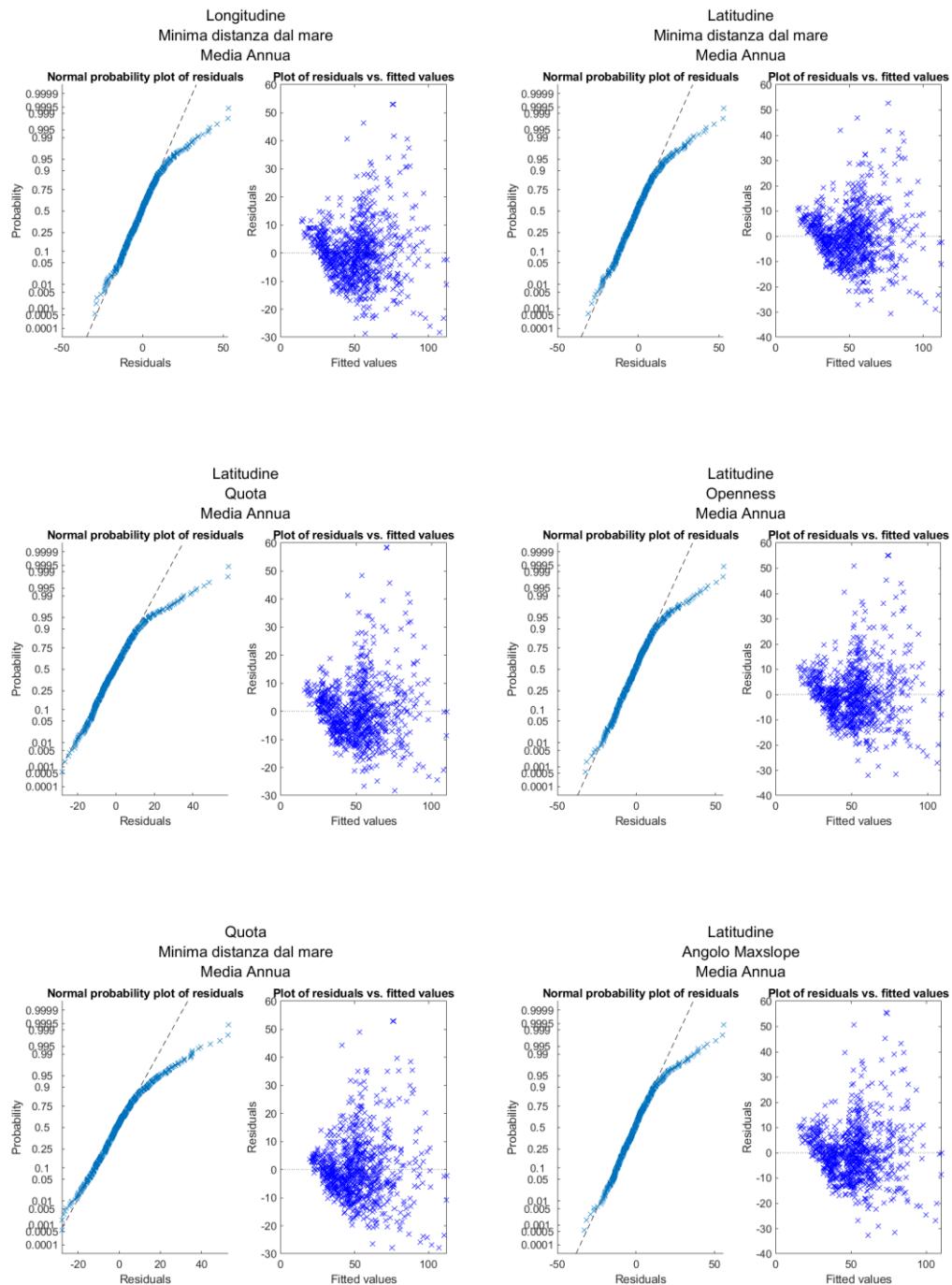


Tabella 38. Regressione 6h con mediana degli estremi, 3 variabili, area Alpi.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.733	0.732	3.30E+01	-2.63E-05	-1.15E-01	3.79E-02
Latitudine	Minima distanza dal mare	Media Annua	0.723	0.722	2.47E+02	-4.63E-05	-6.28E-02	3.74E-02
Latitudine	Quota	Media Annua	0.723	0.722	3.22E+02	-6.17E-05	-5.08E-03	3.79E-02
Latitudine	Openness	Media Annua	0.707	0.706	3.07E+02	-6.36E-05	1.35E+01	3.92E-02
Quota	Minima distanza dal mare	Media Annua	0.707	0.705	2.46E+01	-4.03E-03	-9.04E-02	3.35E-02
Latitudine	Angolo Maxslope	Media Annua	0.706	0.705	3.35E+02	-6.50E-05	-1.05E-01	3.96E-02
Longitudine	Quota	Media Annua	0.681	0.680	2.42E+01	-2.20E-05	-7.26E-03	3.76E-02
Quota	Openness	Media Annua	0.672	0.671	2.44E+01	-6.61E-03	2.89E+01	3.40E-02
Quota	Distanza picco	Media Annua	0.664	0.663	2.08E+01	-8.01E-03	-7.22E-04	3.36E-02
Quota	Angolo Maxslope	Media Annua	0.663	0.662	1.91E+01	-6.40E-03	-1.85E-01	3.47E-02

Figura 40. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 3 variabili, area Alpi



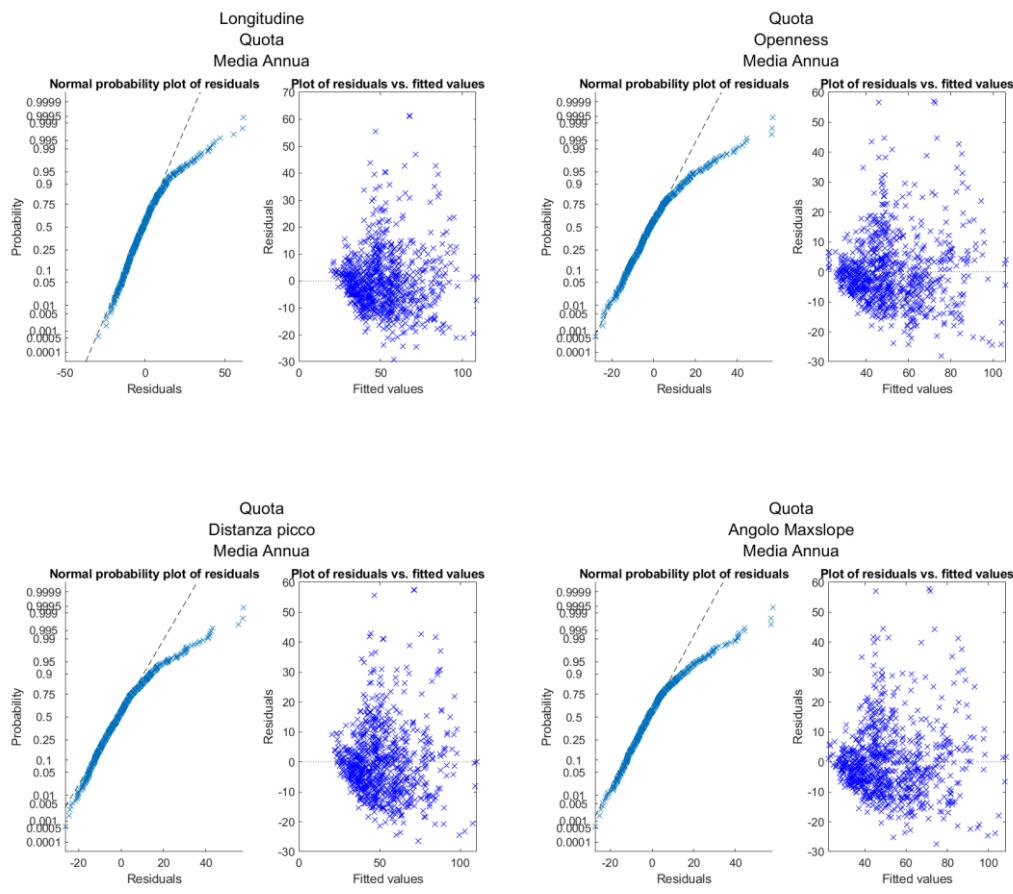
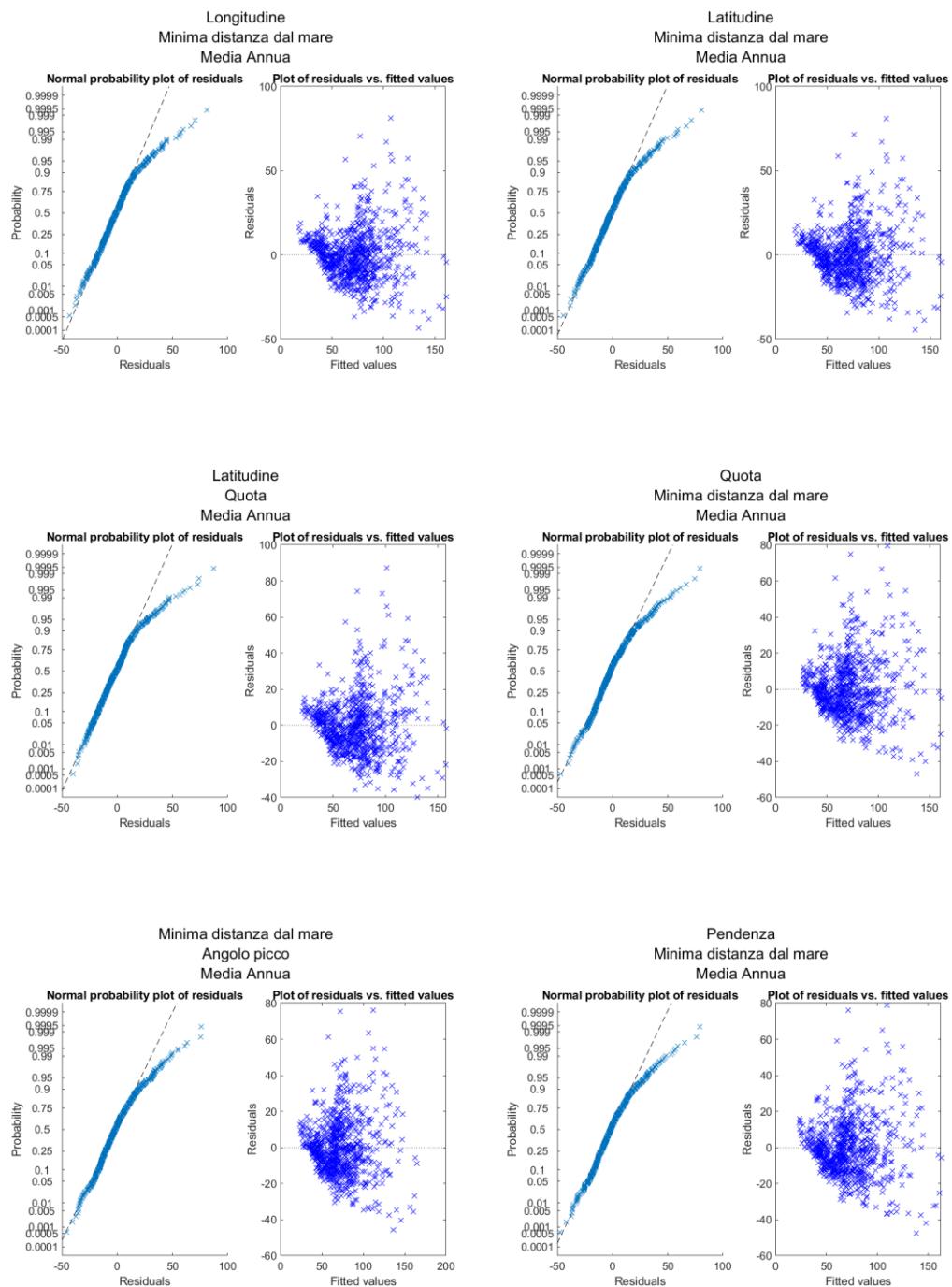


Tabella 39. Regressione 12h con mediana degli estremi, 3 variabili, area Alpi.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.733	0.732	4.29E+01	-3.82E-05	-1.57E-01	5.56E-02
Latitudine	Minima distanza dal mare	Media Annua	0.722	0.721	3.45E+02	-6.54E-05	-8.28E-02	5.47E-02
Latitudine	Quota	Media Annua	0.714	0.713	4.53E+02	-8.80E-05	-4.75E-03	5.62E-02
Quota	Minima distanza dal mare	Media Annua	0.699	0.698	2.85E+01	-3.21E-03	-1.30E-01	4.98E-02
Minima distanza dal mare	Angolo picco	Media Annua	0.698	0.697	2.32E+01	-1.49E-01	2.48E-01	5.02E-02
Pendenza	Minima distanza dal mare	Media Annua	0.698	0.697	2.45E+01	1.35E-01	-1.44E-01	5.03E-02
Longitudine	Quota	Media Annua	0.674	0.673	2.80E+01	-3.18E-05	-7.87E-03	5.58E-02
Quota	Distanza picco	Media Annua	0.657	0.656	2.32E+01	-8.96E-03	-1.05E-03	4.99E-02
Longitudine	Angolo Maxslope	Media Annua	0.655	0.654	2.13E+01	-2.98E-05	-1.85E-01	5.78E-02
Quota	Openness	Media Annua	0.653	0.652	-1.90E+01	-7.07E-03	2.47E+01	5.09E-02

Figura 41. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 3 variabili, area Alpi



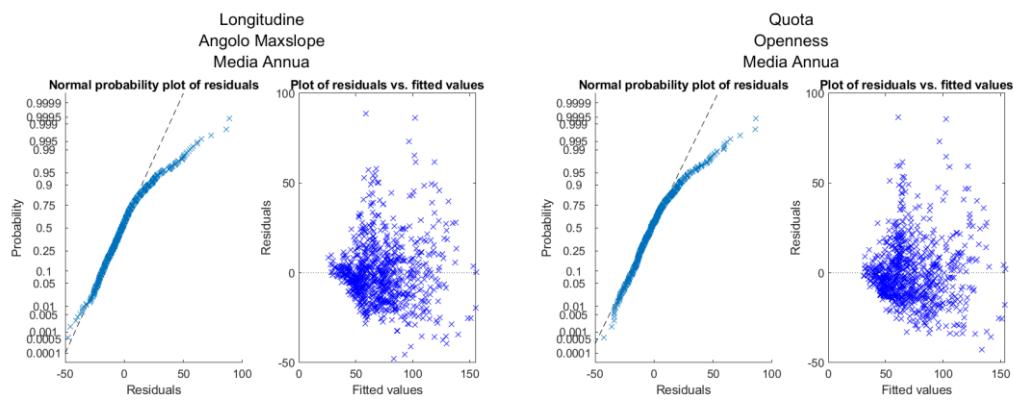
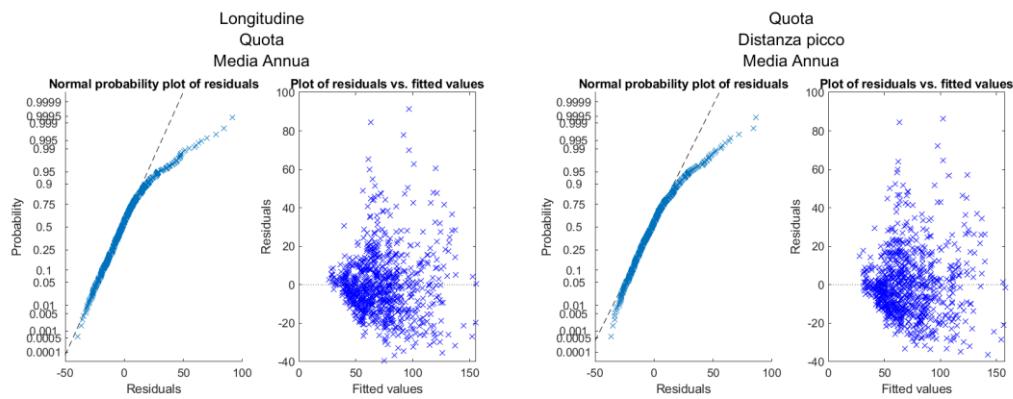
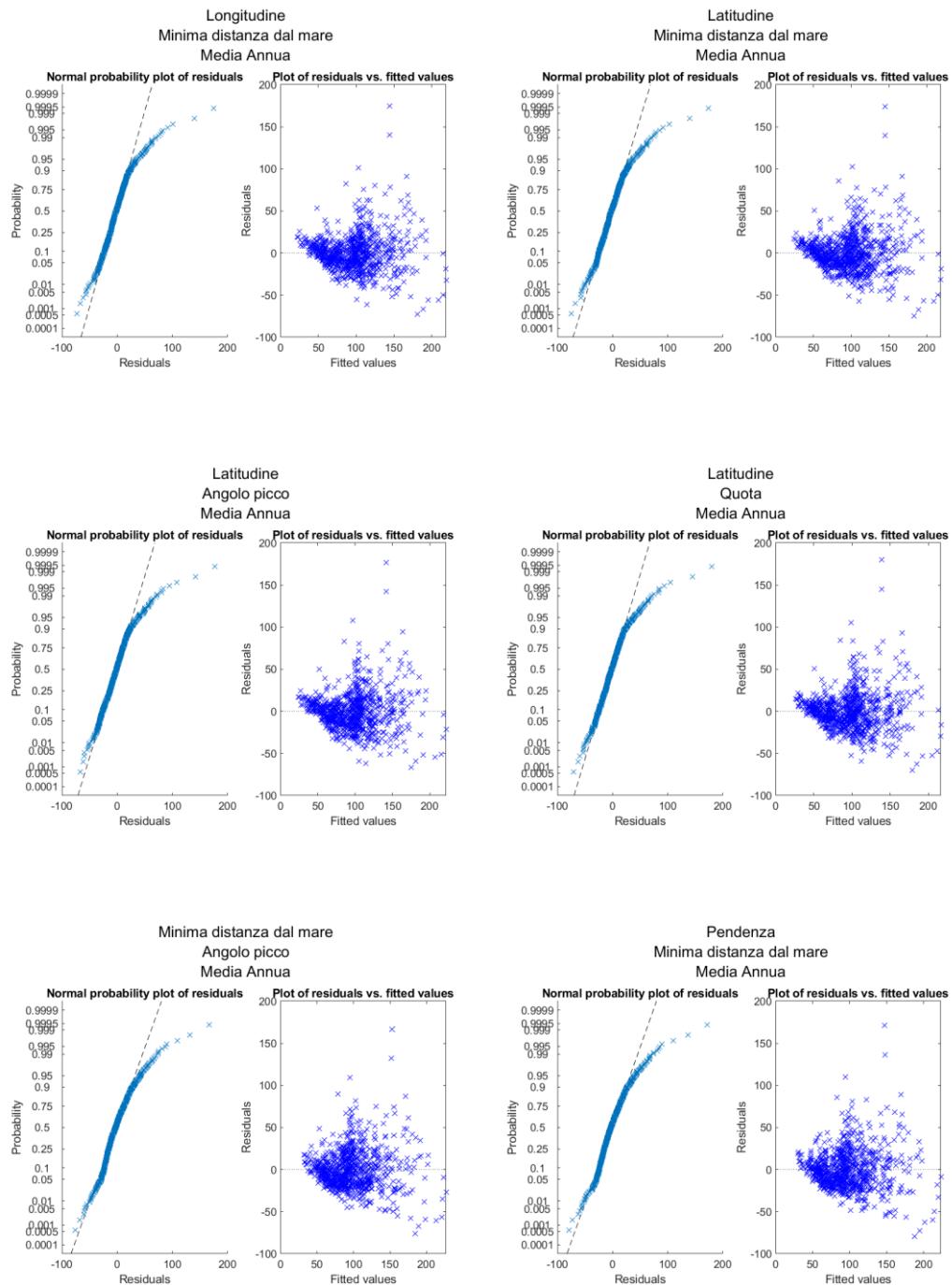
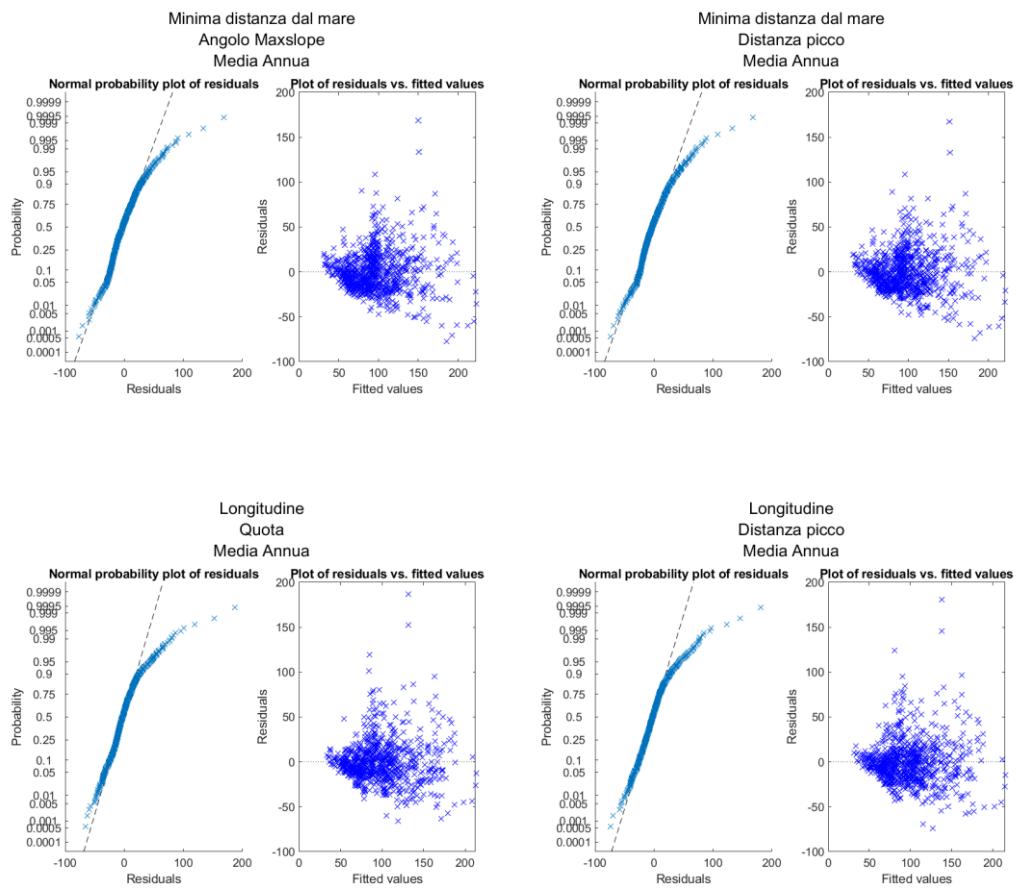


Tabella 40. Regressione 24h con mediana degli estremi, 3 variabili, area Alpi.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.707	0.706	5.78E+01	-6.08E-05	-1.96E-01	7.82E-02
Latitudine	Minima distanza dal mare	Media Annua	0.692	0.691	5.40E+02	-1.04E-04	-7.78E-02	7.69E-02
Latitudine	Angolo picco	Media Annua	0.688	0.687	6.83E+02	-1.36E-04	3.75E-01	8.00E-02
Latitudine	Quota	Media Annua	0.688	0.687	6.43E+02	-1.26E-04	-4.15E-03	7.84E-02
Minima distanza dal mare	Angolo picco	Media Annua	0.663	0.662	2.59E+01	-1.86E-01	4.52E-01	6.96E-02
Pendenza	Minima distanza dal mare	Media Annua	0.662	0.661	2.83E+01	2.48E-01	-1.77E-01	6.98E-02
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.660	0.659	2.76E+01	-1.83E-01	1.92E-01	7.00E-02
Minima distanza dal mare	Distanza picco	Media Annua	0.660	0.659	3.36E+01	-1.69E-01	-5.74E-04	6.96E-02
Longitudine	Quota	Media Annua	0.656	0.655	3.76E+01	-5.25E-05	-8.75E-03	7.88E-02
Longitudine	Distanza picco	Media Annua	0.643	0.642	2.85E+01	-4.95E-05	-6.42E-04	8.04E-02

Figura 42. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 3 variabili, area Alpi





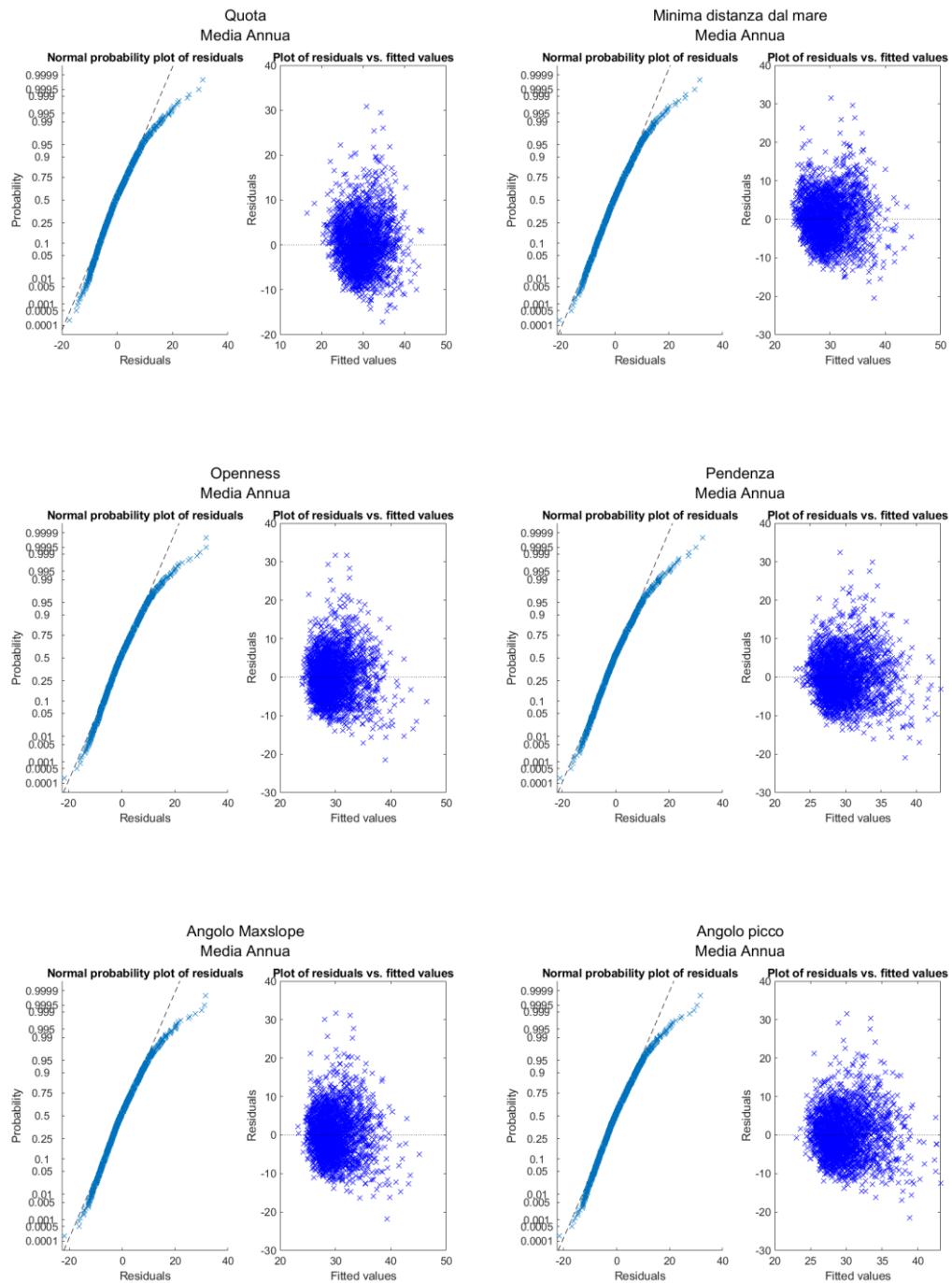
**Allegato 6 – Regressioni lineari multiple per l’area Appenninica**  
***Regressioni con la media delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h***

Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la media degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l’area Appenninica. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 41. Regressione 1h con media degli estremi, 2 variabili, area Appennini.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Quota	Media annua	0.299	0.299	2.16E+01	-7.49E-03	1.08E-02	1.21	1.21
Min Dist. dal Mare	Media annua	0.243	0.242	2.36E+01	-4.83E-02	7.92E-03	1.00	1.00
Openness	Media annua	0.201	0.200	-8.42E+00	1.88E+01	9.39E-03	1.36	1.36
Pendenza	Media annua	0.198	0.197	2.19E+01	-1.01E-01	8.65E-03	1.10	1.10
Angolo maxslope	Media annua	0.194	0.194	2.13E+01	-9.68E-02	9.14E-03	1.40	1.40
Angolo picco	Media annua	0.193	0.193	2.17E+01	-1.21E-01	8.86E-03	1.26	1.26
Longitudine	Min Dist. dal Mare	0.103	0.103	3.74E+01	-6.82E-06	-6.55E-02	1.16	1.16
Min Dist. dal Mare	Angolo maxslope	0.075	0.074	3.05E+01	-4.66E-02	9.84E-02	1.01	1.01
Quota	Min Dist. dal Mare	0.072	0.071	3.21E+01	-2.18E-03	-4.67E-02	1.01	1.01
Min Dist. dal Mare	Openness	0.069	0.068	4.93E+01	-4.76E-02	-1.18E+01	1.00	1.00

Figura 43. Diagrammi diagnostici per regressione 1h con media degli estremi, 2 variabili, area Appennini



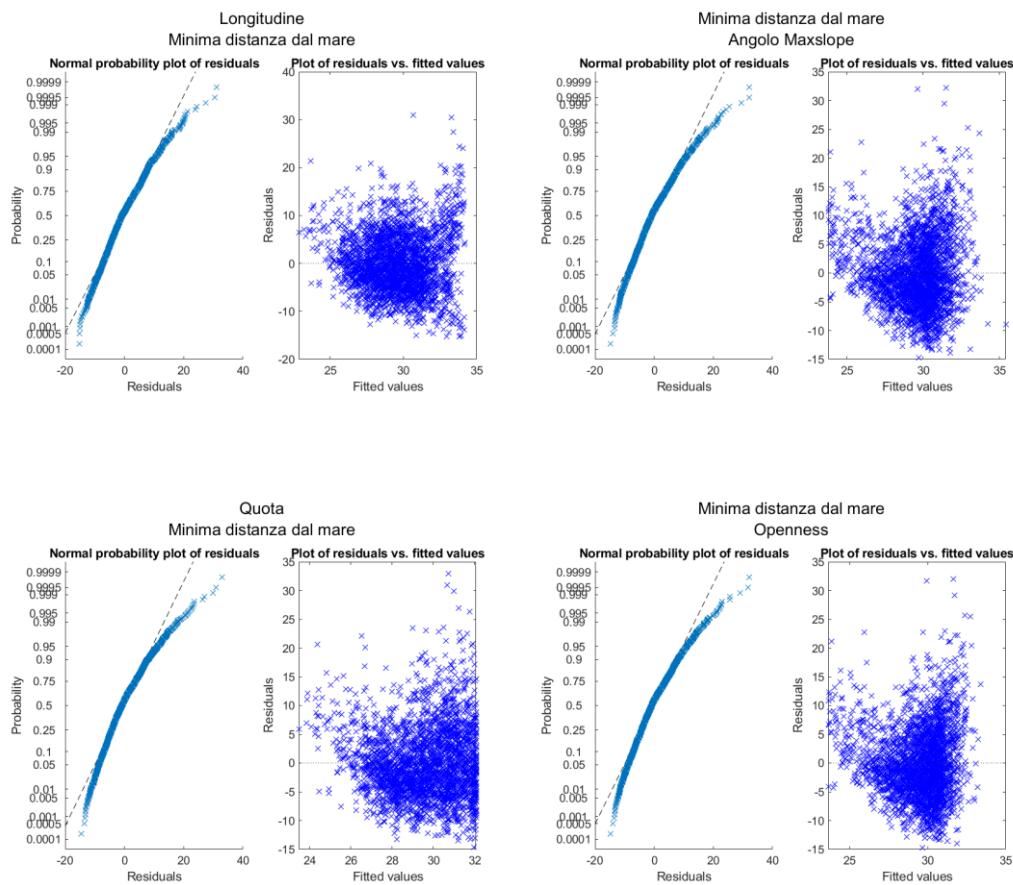
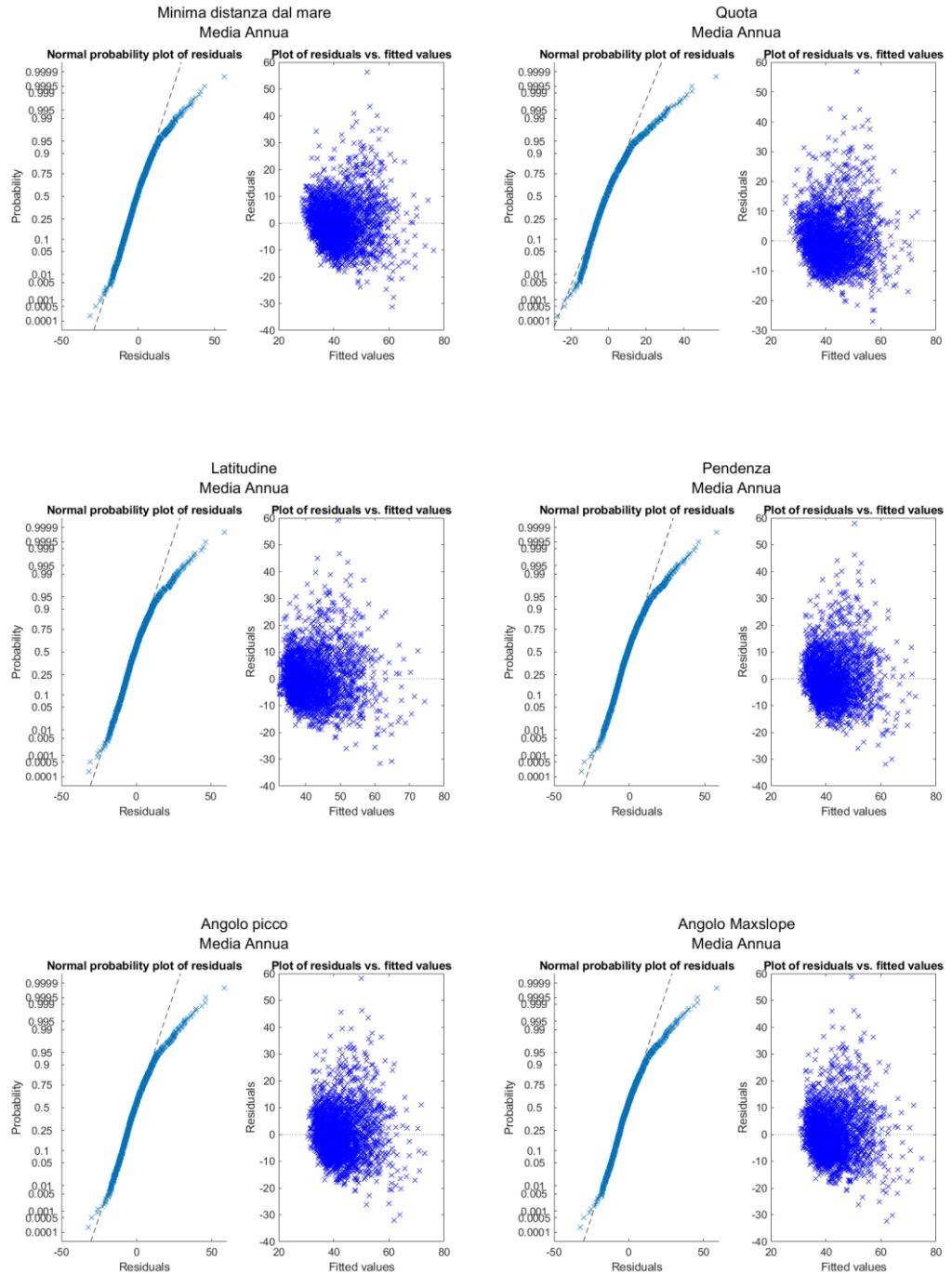


Tabella 42. Regressione 3h con media degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.429	0.428	2.81E+01	-1.01E-01	1.80E-02	1.00	1.00
Quota	Media annua	0.406	0.405	2.40E+01	-9.64E-03	2.17E-02	1.21	1.21
Latitudine	Media annua	0.343	0.342	3.70E+01	-2.86E-06	1.87E-02	1.09	1.09
Pendenza	Media annua	0.342	0.341	2.43E+01	-8.68E-02	1.86E-02	1.10	1.10
Angolo picco	Media annua	0.340	0.340	2.41E+01	-9.51E-02	1.88E-02	1.26	1.26
Angolo maxslope	Media annua	0.340	0.339	2.39E+01	-6.29E-02	1.88E-02	1.40	1.40
Min Dist. dal Mare	Angolo maxslope	0.156	0.155	4.28E+01	-9.41E-02	3.40E-01	1.01	1.01
Longitudine	Min Dist. dal Mare	0.148	0.148	5.71E+01	-1.29E-05	-1.33E-01	1.16	1.16
Min Dist. dal Mare	Openness	0.147	0.146	1.19E+02	-9.69E-02	-4.83E+01	1.00	1.00
Min Dist. dal Mare	Angolo picco	0.130	0.130	4.29E+01	-9.50E-02	3.64E-01	1.01	1.01

Figura 44. Diagrammi diagnostici per regressione 3h con media degli estremi, 2 variabili, area Appennini



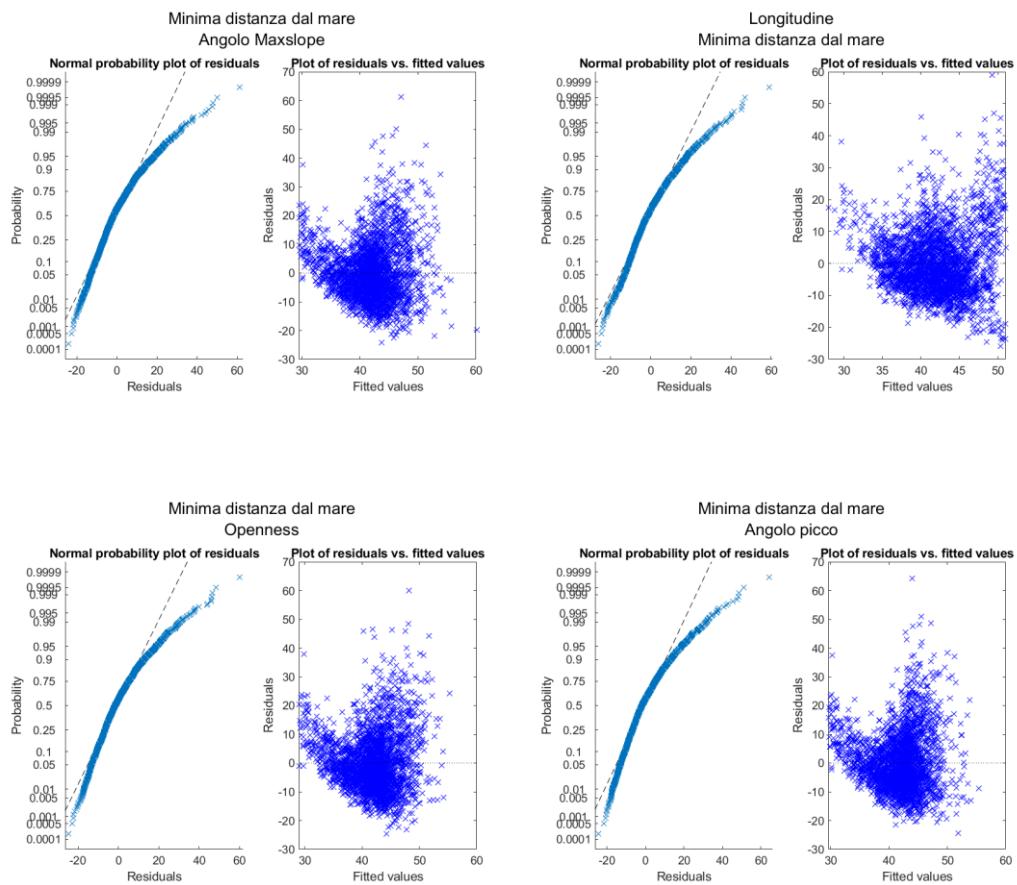
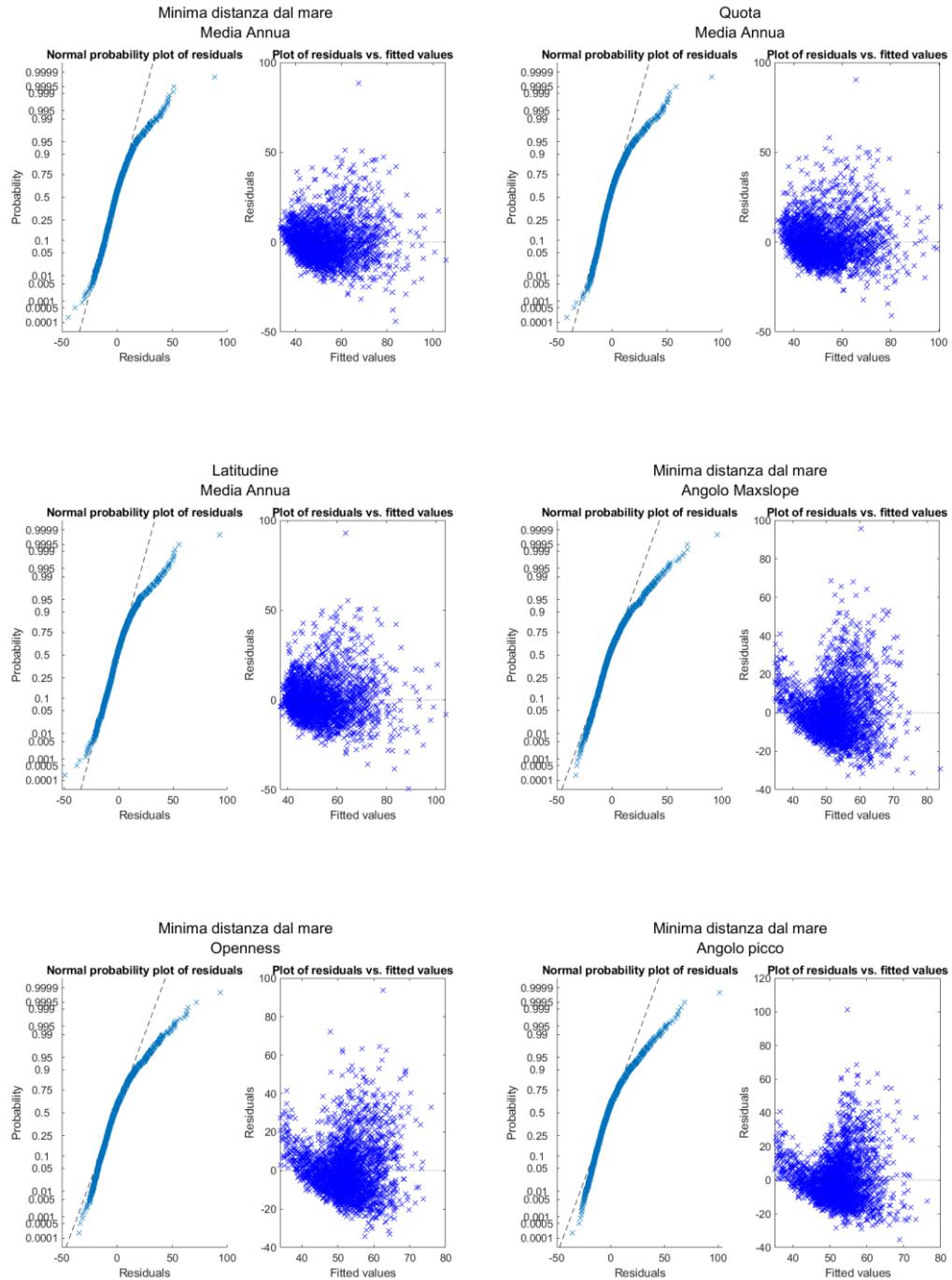


Tabella 43. Regressione 6h con media degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.519	0.519	2.95E+01	-1.36E-01	2.83E-02	1.00	1.00
Quota	Media annua	0.462	0.461	2.40E+01	-8.66E-03	3.17E-02	1.21	1.21
Latitudine	Media annua	0.446	0.446	5.36E+01	-6.53E-06	2.99E-02	1.09	1.09
Min Dist. dal Mare	Angolo maxslope	0.195	0.195	5.20E+01	-1.24E-01	6.18E-01	1.01	1.01
Min Dist. dal Mare	Openness	0.186	0.185	1.95E+02	-1.29E-01	-9.05E+01	1.00	1.00
Min Dist. dal Mare	Angolo picco	0.156	0.155	5.21E+01	-1.25E-01	6.81E-01	1.01	1.01
Latitudine	Angolo maxslope	0.141	0.140	1.32E+01	7.11E-06	6.97E-01	1.02	1.02
Longitudine	Min Dist. dal Mare	0.141	0.140	7.28E+01	-1.74E-05	-1.81E-01	1.16	1.16
Longitudine	Angolo maxslope	0.137	0.136	5.29E+01	-7.67E-06	6.70E-01	1.00	1.00
Latitudine	Openness	0.121	0.121	1.74E+02	6.23E-06	-9.90E+01	1.01	1.01

Figura 45. Diagrammi diagnostici per regressione 6h con media degli estremi, 2 variabili, area Appennini



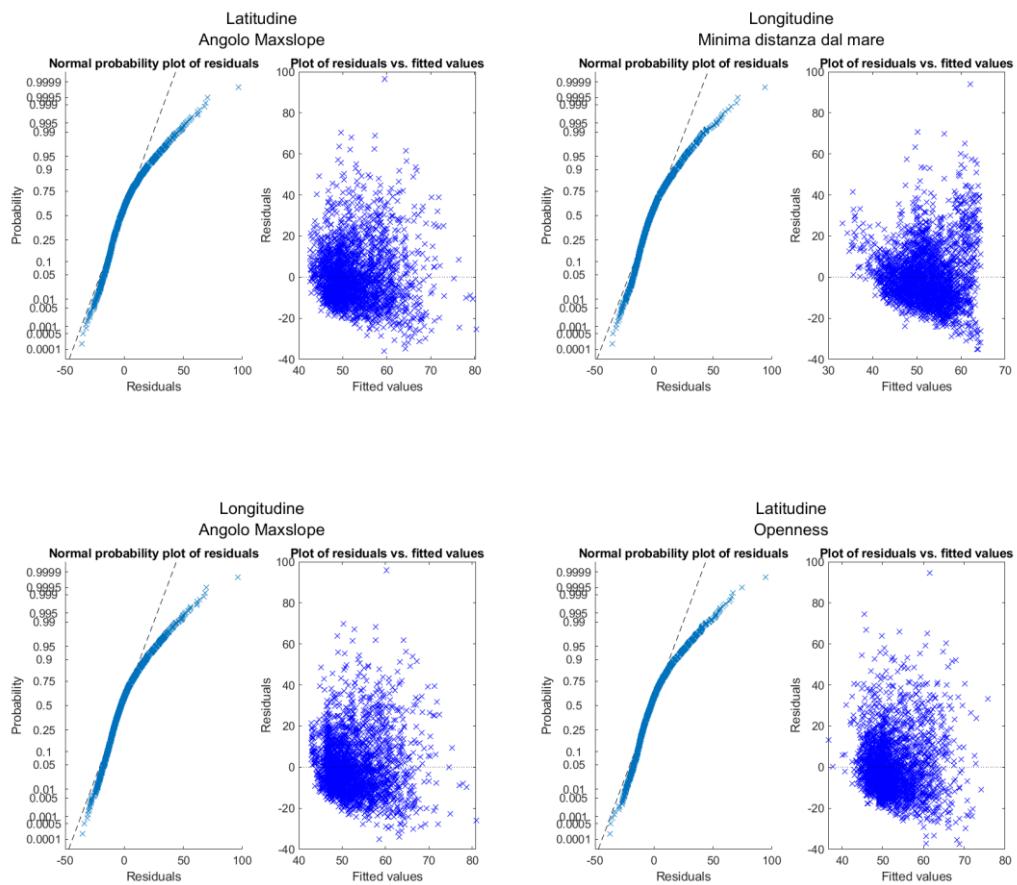
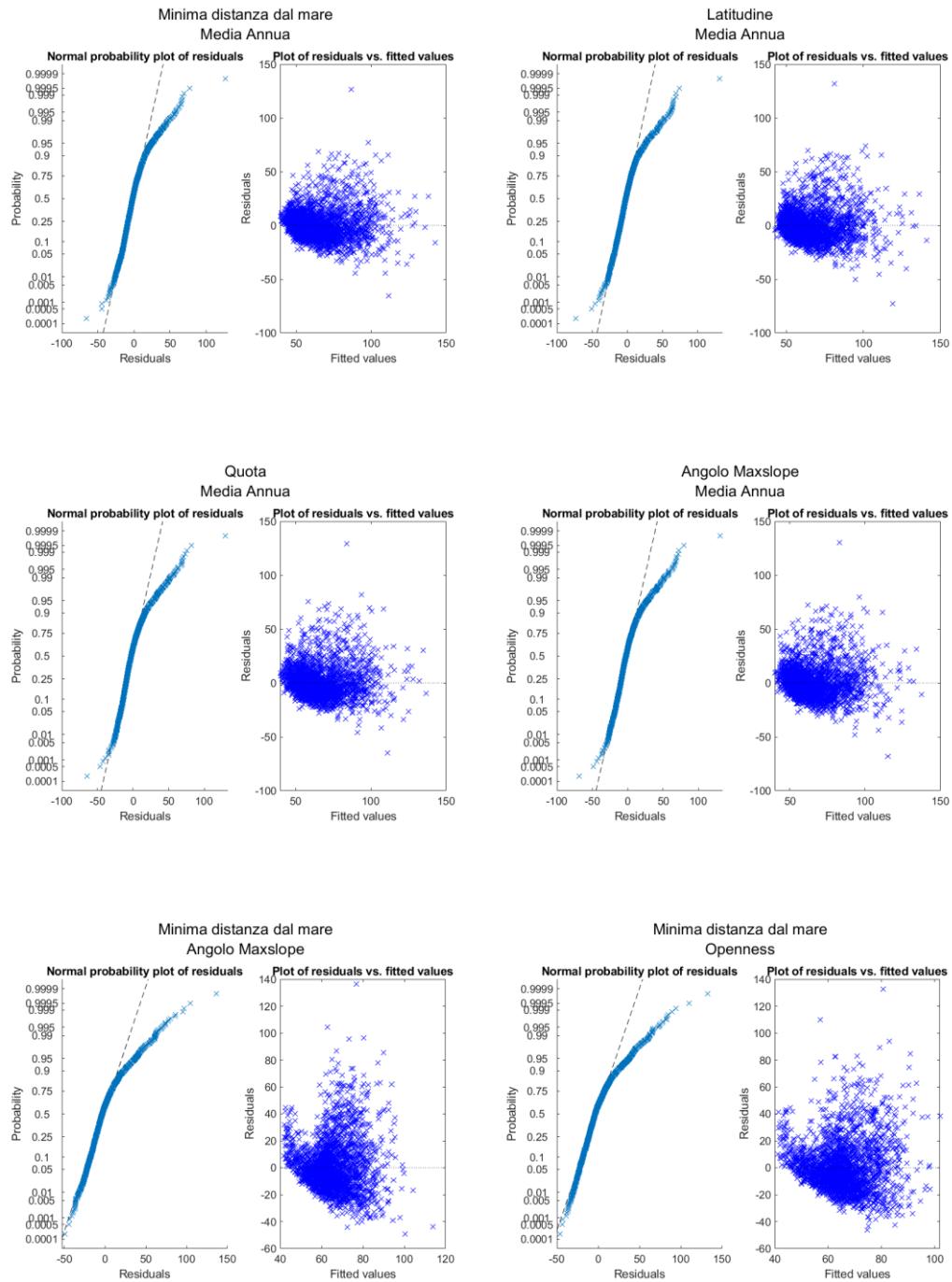


Tabella 44. Regressione 12h con media degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.561	0.561	3.09E+01	-1.72E-01	4.15E-02	1.00	1.00
Latitudine	Media annua	0.506	0.505	7.15E+01	-1.05E-05	4.39E-02	1.09	1.09
Quota	Media annua	0.496	0.495	2.41E+01	-6.00E-03	4.39E-02	1.21	1.21
Angolo maxslope	Media annua	0.489	0.489	2.46E+01	8.43E-02	4.06E-02	1.40	1.40
Min Dist. dal Mare	Angolo maxslope	0.214	0.213	6.32E+01	-1.52E-01	9.73E-01	1.01	1.01
Min Dist. dal Mare	Openness	0.205	0.205	2.92E+02	-1.60E-01	-1.45E+02	1.00	1.00
Longitudine	Angolo maxslope	0.169	0.169	6.51E+01	-1.04E-05	1.04E+00	1.00	1.00
Min Dist. dal Mare	Angolo picco	0.164	0.164	6.33E+01	-1.54E-01	1.09E+00	1.01	1.01
Quota	Angolo maxslope	0.164	0.164	5.56E+01	5.56E-03	9.55E-01	1.13	1.13
Pendenza	Angolo maxslope	0.160	0.160	5.62E+01	1.50E-01	9.70E-01	1.21	1.21

*Figura 46. Diagrammi diagnostici per regressione 12h con media degli estremi, 2 variabili, area Appennini*



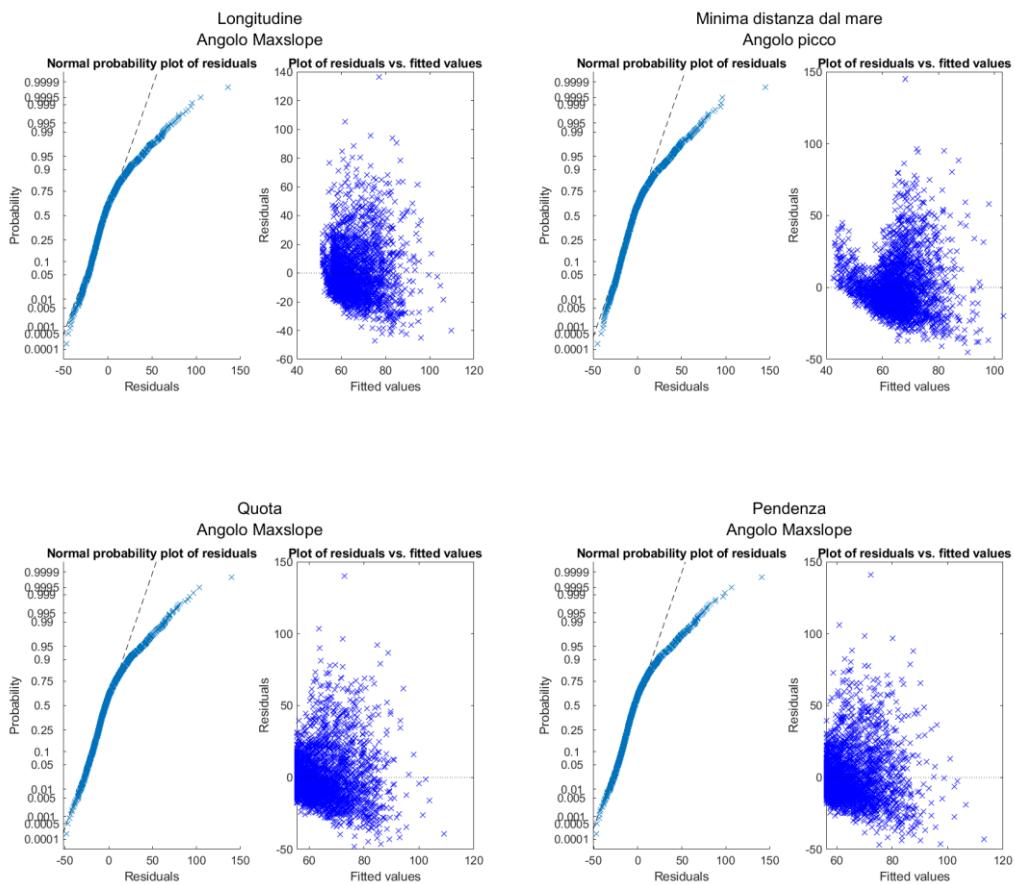
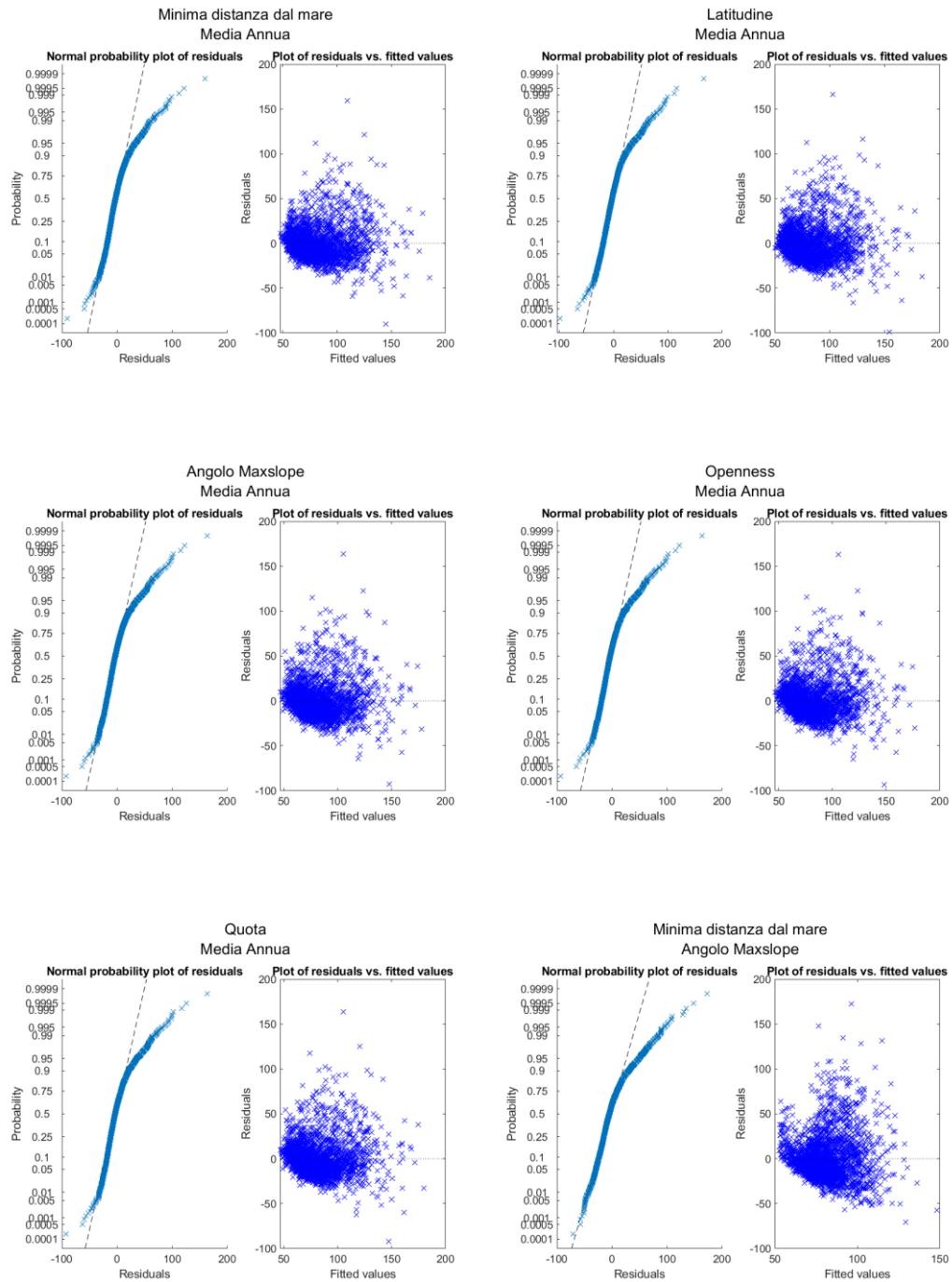


Tabella 45. Regressione 24h con media degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.562	0.562	3.29E+01	-1.98E-01	5.63E-02	1.00	1.00
Latitudine	Media annua	0.526	0.525	8.89E+01	-1.42E-05	5.95E-02	1.09	1.09
Angolo maxslope	Media annua	0.510	0.510	2.60E+01	1.75E-01	5.43E-02	1.40	1.40
Openness	Media annua	0.510	0.509	6.57E+01	-2.53E+01	5.45E-02	1.36	1.36
Quota	Media annua	0.509	0.509	2.53E+01	-2.60E-03	5.74E-02	1.21	1.21
Min Dist. dal Mare	Angolo maxslope	0.213	0.213	7.63E+01	-1.69E-01	1.38E+00	1.01	1.01
Min Dist. dal Mare	Openness	0.206	0.206	4.03E+02	-1.80E-01	-2.07E+02	1.00	1.00
Quota	Angolo maxslope	0.192	0.192	6.63E+01	1.23E-02	1.27E+00	1.13	1.13
Quota	Openness	0.187	0.186	3.63E+02	1.42E-02	-1.88E+02	1.09	1.09
Longitudine	Angolo maxslope	0.187	0.186	8.07E+01	-1.44E-05	1.45E+00	1.00	1.00

*Figura 47. Diagrammi diagnostici per regressione 24h con media degli estremi, 2 variabili, area Appennini*



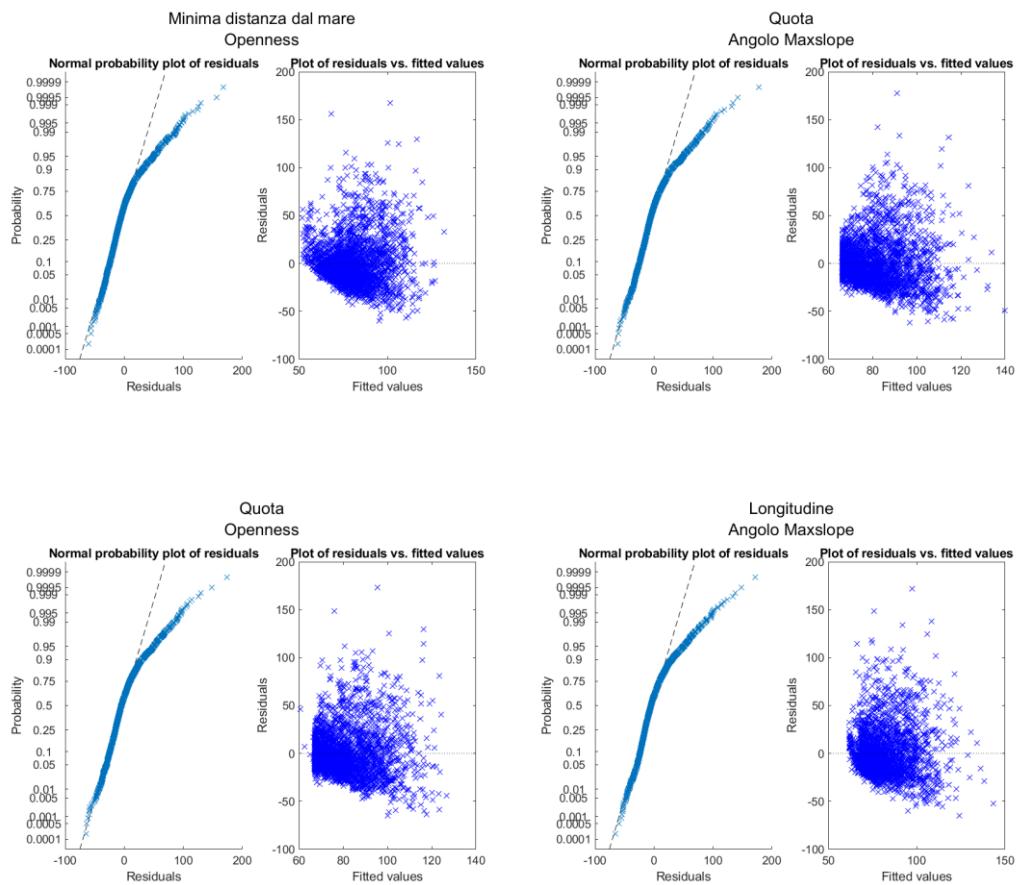
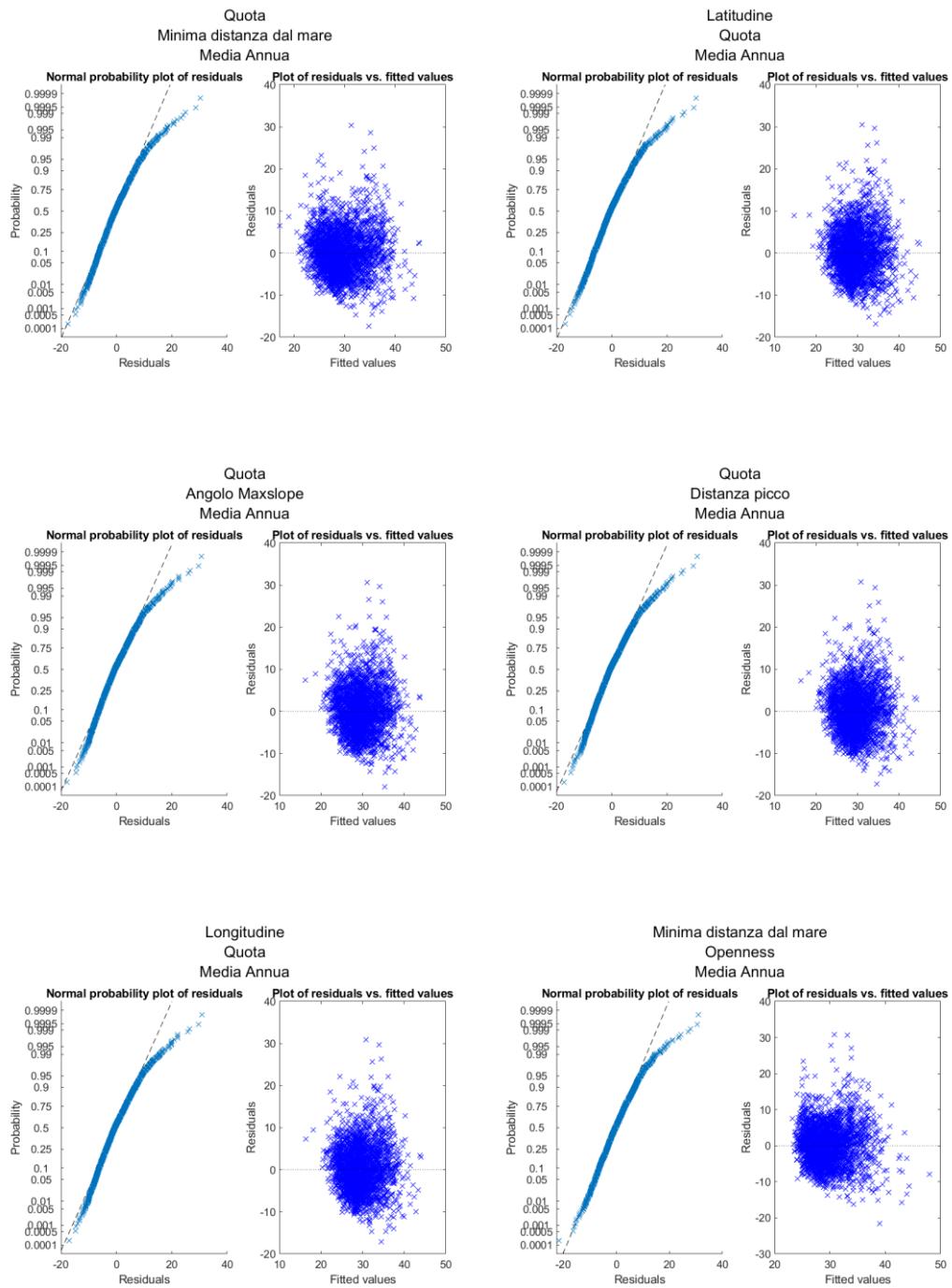


Tabella 46. Regressione 1h con media degli estremi, 3 variabili, area Appennini.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Quota	Min Dist. dal Mare	Media annua	0.341	0.340	2.32E+01	-6.97E-03	-4.12E-02	1.06E-02	1.22	1.01	1.21
Latitudine	Quota	Media annua	0.312	0.311	3.51E+01	-3.03E-06	-8.49E-03	1.18E-02	1.27	1.41	1.46
Quota	Angolo maxslope	Media annua	0.301	0.301	2.14E+01	-7.32E-03	-4.71E-02	1.13E-02	1.24	1.44	1.53
Quota	Distanza picco	Media annua	0.301	0.300	2.18E+01	-7.63E-03	-5.59E-05	1.08E-02	1.24	1.03	1.21
Longitudine	Quota	Media annua	0.300	0.300	2.05E+01	1.16E-06	-7.64E-03	1.10E-02	1.07	1.25	1.28
Min Dist. dal Mare	Openness	Media annua	0.264	0.264	-1.08E+01	-5.05E-02	2.16E+01	9.57E-03	1.01	1.37	1.36
Latitudine	Min Dist. dal Mare	Media annua	0.264	0.263	5.82E+00	4.08E-06	-6.28E-02	7.01E-03	1.35	1.25	1.11
Pendenza	Min Dist. dal Mare	Media annua	0.262	0.261	2.38E+01	-1.19E-01	-5.05E-02	8.74E-03	1.11	1.01	1.10
Longitudine	Min Dist. dal Mare	Media annua	0.259	0.259	2.79E+01	-4.32E-06	-5.88E-02	7.45E-03	1.20	1.17	1.04
Min Dist. dal Mare	Angolo maxslope	Media annua	0.259	0.258	2.32E+01	-5.11E-02	-1.23E-01	9.43E-03	1.01	1.42	1.40

Figura 48. Diagrammi diagnostici per regressione 1h con media degli estremi, 3 variabili, area Appennini



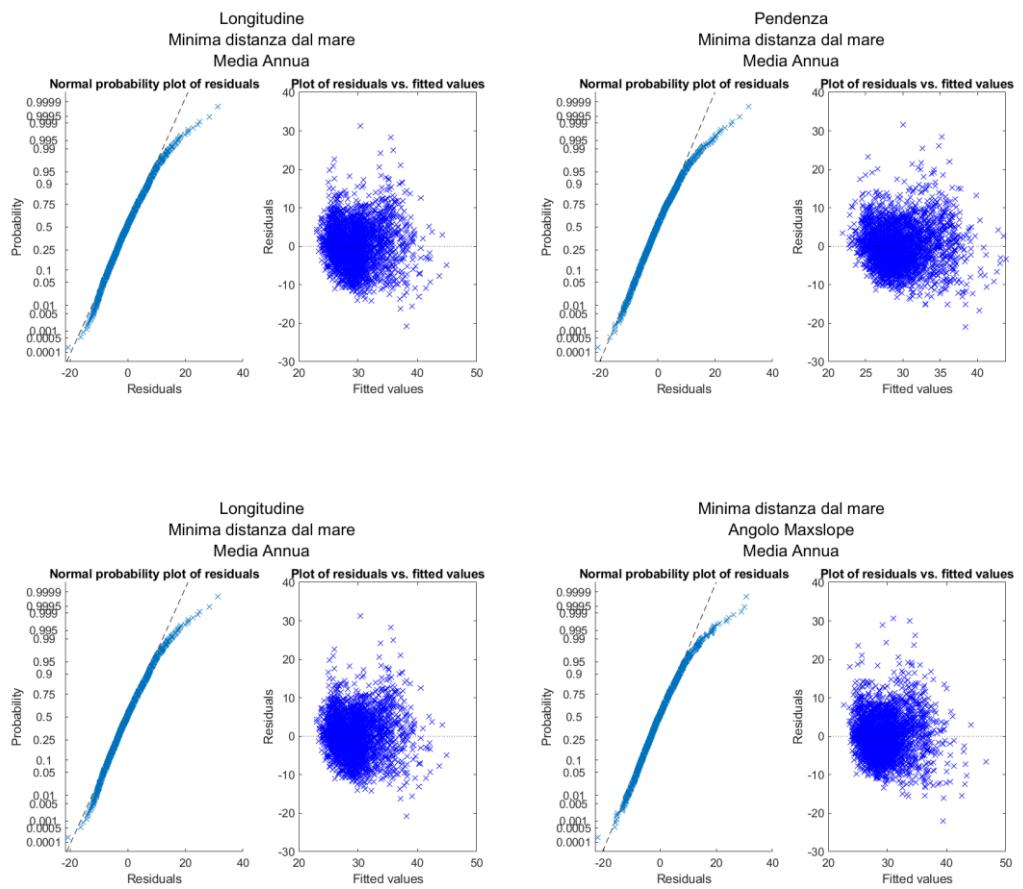
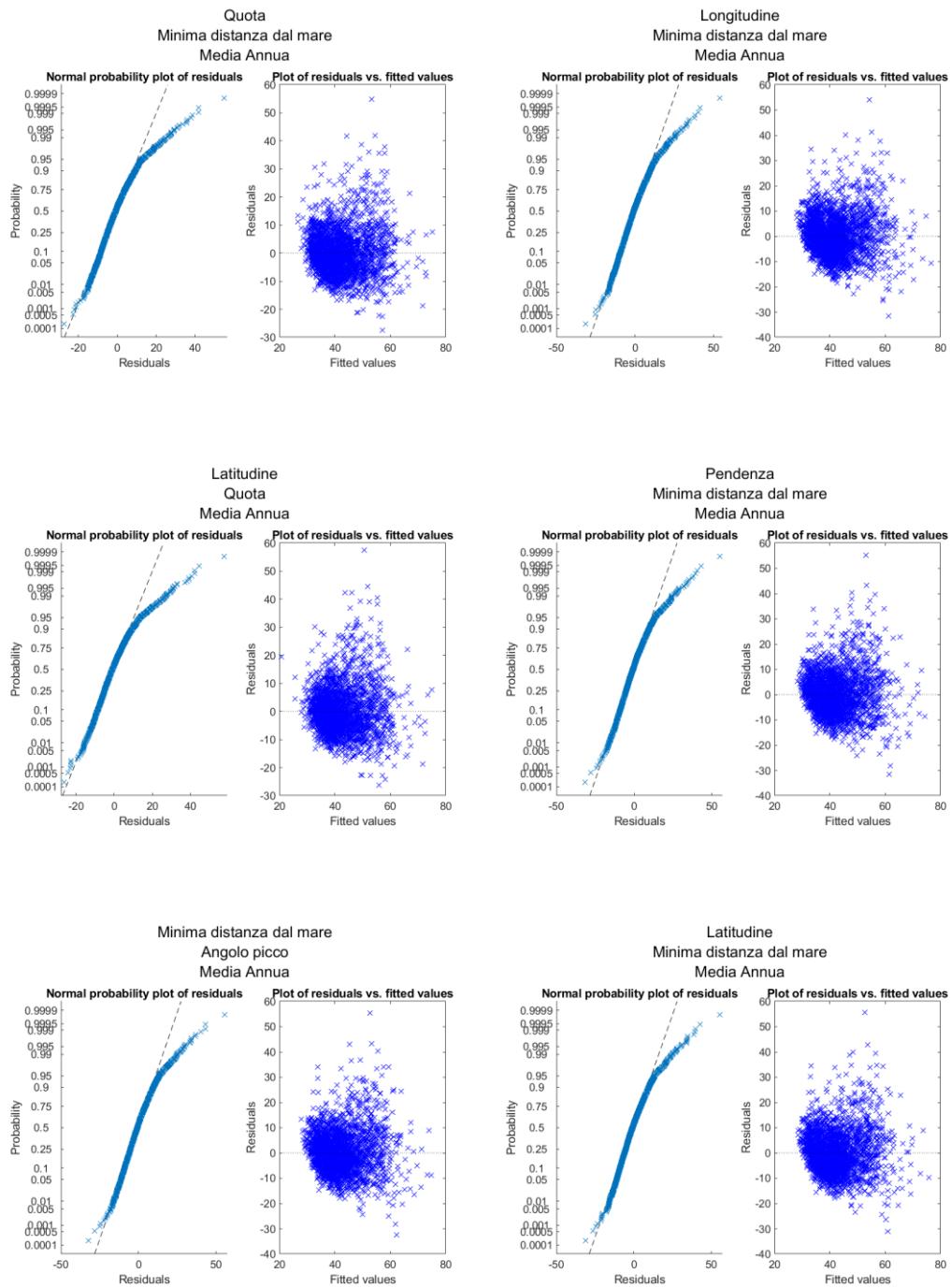


Tabella 47. Regressione 3h con media degli estremi, 3 variabili, area Appennini.

	Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Quota	Min Dist. dal Mare	Media annua	0.481	0.480	2.75E+01	-8.49E-03	-9.21E-02	2.12E-02	1.22	1.01	1.21
Longitudine	Min Dist. dal Mare	Media annua	0.445	0.444	3.50E+01	-7.07E-06	-1.18E-01	1.72E-02	1.20	1.17	1.04
Latitudine	Quota	Media annua	0.438	0.438	6.04E+01	-8.12E-06	-1.23E-02	2.45E-02	1.27	1.41	1.46
Pendenza	Min Dist. dal Mare	Media annua	0.436	0.435	2.83E+01	-1.22E-01	-1.03E-01	1.88E-02	1.11	1.01	1.10
Min Dist. dal Mare	Angolo picco	Media annua	0.436	0.435	2.81E+01	-1.04E-01	-1.75E-01	1.93E-02	1.01	1.28	1.26
Latitudine	Min Dist. dal Mare	Media annua	0.434	0.434	1.32E+01	3.41E-06	-1.13E-01	1.72E-02	1.35	1.25	1.11
Min Dist. dal Mare	Angolo maxslope	Media annua	0.434	0.434	2.77E+01	-1.03E-01	-1.17E-01	1.94E-02	1.01	1.42	1.40
Min Dist. dal Mare	Distanza picco	Media annua	0.430	0.430	2.77E+01	-1.02E-01	8.54E-05	1.80E-02	1.01	1.01	1.00
Longitudine	Quota	Media annua	0.408	0.408	2.17E+01	2.49E-06	-9.97E-03	2.21E-02	1.07	1.25	1.28
Quota	Angolo picco	Media annua	0.408	0.407	2.40E+01	-1.02E-02	9.26E-02	2.12E-02	1.35	1.41	1.35

Figura 49. Diagrammi diagnostici per regressione 3h con media degli estremi, 3 variabili, area Appennini



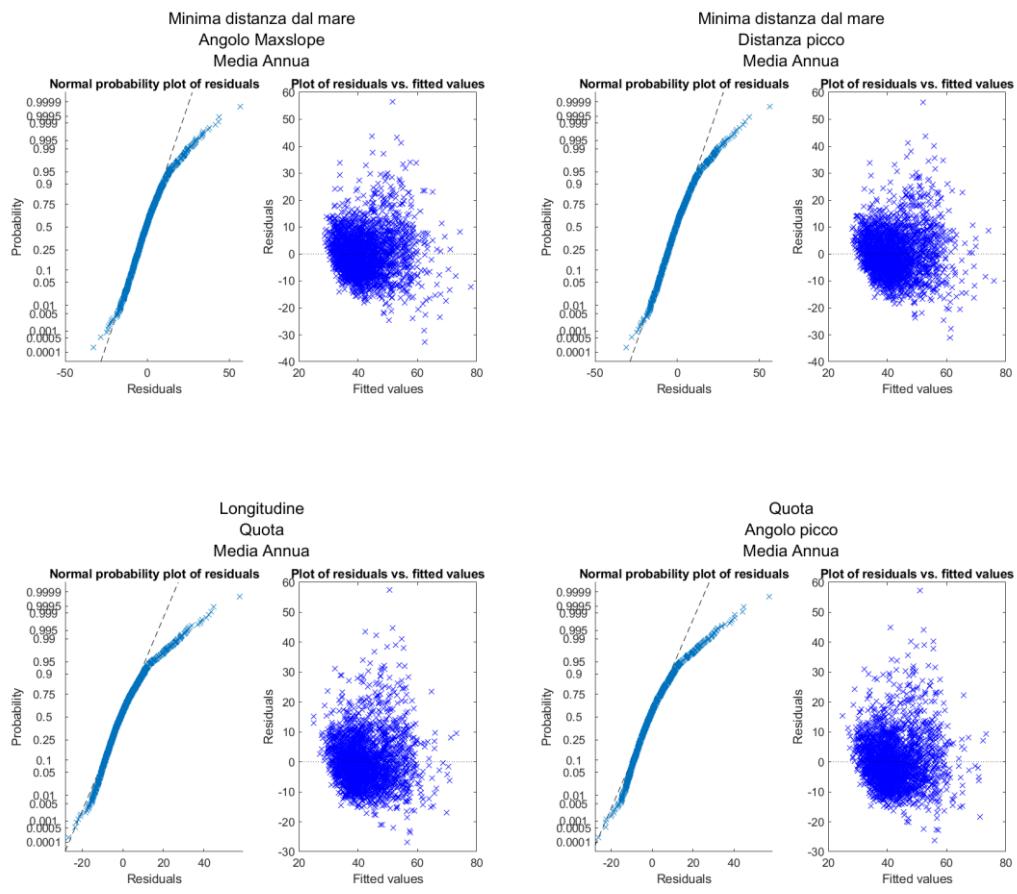
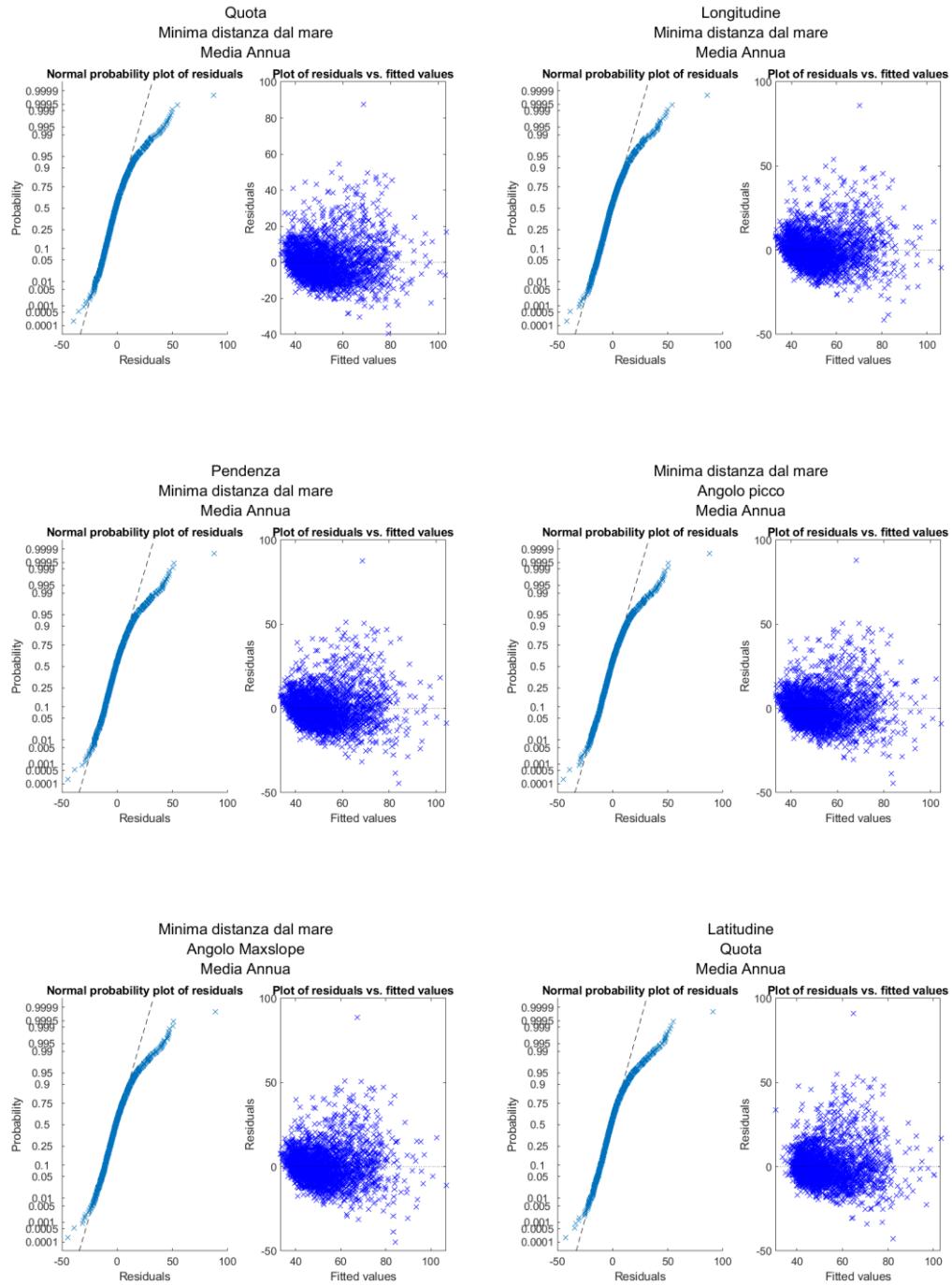


Tabella 48. Regressione 6h con media degli estremi, 3 variabili, area Appennini.

	<b>Variabili</b>		<b>R<sup>2</sup></b>	<b>R<sup>2</sup><sub>adj</sub></b>	<b>β<sub>0</sub></b>	<b>β<sub>1</sub></b>	<b>β<sub>2</sub></b>	<b>β<sub>3</sub></b>	<b>VIF 1</b>	<b>VIF 2</b>	<b>VIF 3</b>
Quota	Min Dist. dal Mare	Media annua	0.538	0.538	2.90E+01	-7.05E-03	-1.29E-01	3.10E-02	1.22	1.01	1.21
Longitudine	Min Dist. dal Mare	Media annua	0.530	0.530	3.75E+01	-8.13E-06	-1.56E-01	2.75E-02	1.20	1.17	1.04
Pendenza	Min Dist. dal Mare	Media annua	0.522	0.521	2.97E+01	-9.67E-02	-1.38E-01	2.90E-02	1.11	1.01	1.10
Min Dist. dal Mare	Angolo picco	Media annua	0.522	0.521	2.95E+01	-1.39E-01	-1.40E-01	2.94E-02	1.01	1.28	1.26
Min Dist. dal Mare	Angolo maxslope	Media annua	0.520	0.520	2.93E+01	-1.38E-01	-6.89E-02	2.92E-02	1.01	1.42	1.40
Latitudine	Quota	Media annua	0.498	0.497	7.74E+01	-1.19E-05	-1.26E-02	3.59E-02	1.27	1.41	1.46
Longitudine	Quota	Media annua	0.464	0.463	2.09E+01	3.44E-06	-9.13E-03	3.23E-02	1.07	1.25	1.28
Quota	Angolo picco	Media annua	0.464	0.463	2.41E+01	-9.45E-03	1.41E-01	3.10E-02	1.35	1.41	1.35
Quota	Pendenza	Media annua	0.463	0.463	2.39E+01	-9.43E-03	8.33E-02	3.15E-02	1.39	1.27	1.23
Quota	Angolo maxslope	Media annua	0.462	0.462	2.43E+01	-8.89E-03	6.35E-02	3.10E-02	1.24	1.44	1.53

Figura 50. Diagrammi diagnostici per regressione 6h con media degli estremi, 3 variabili, area Appennini



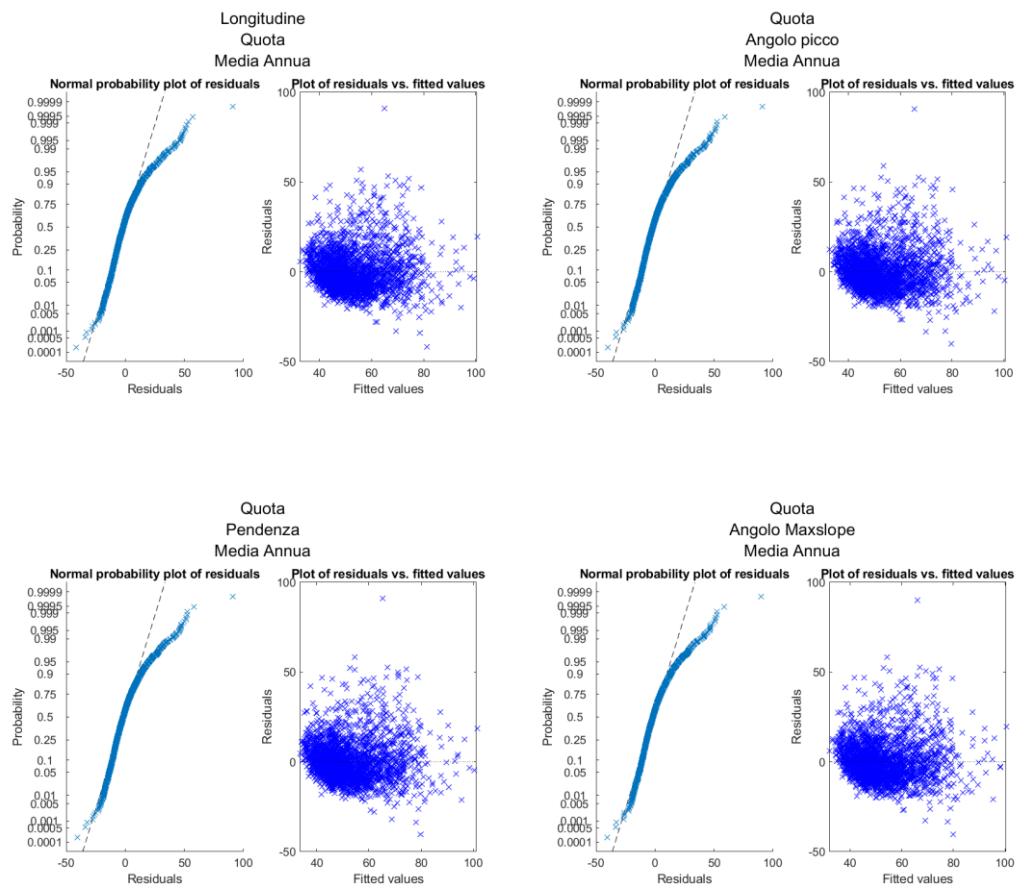
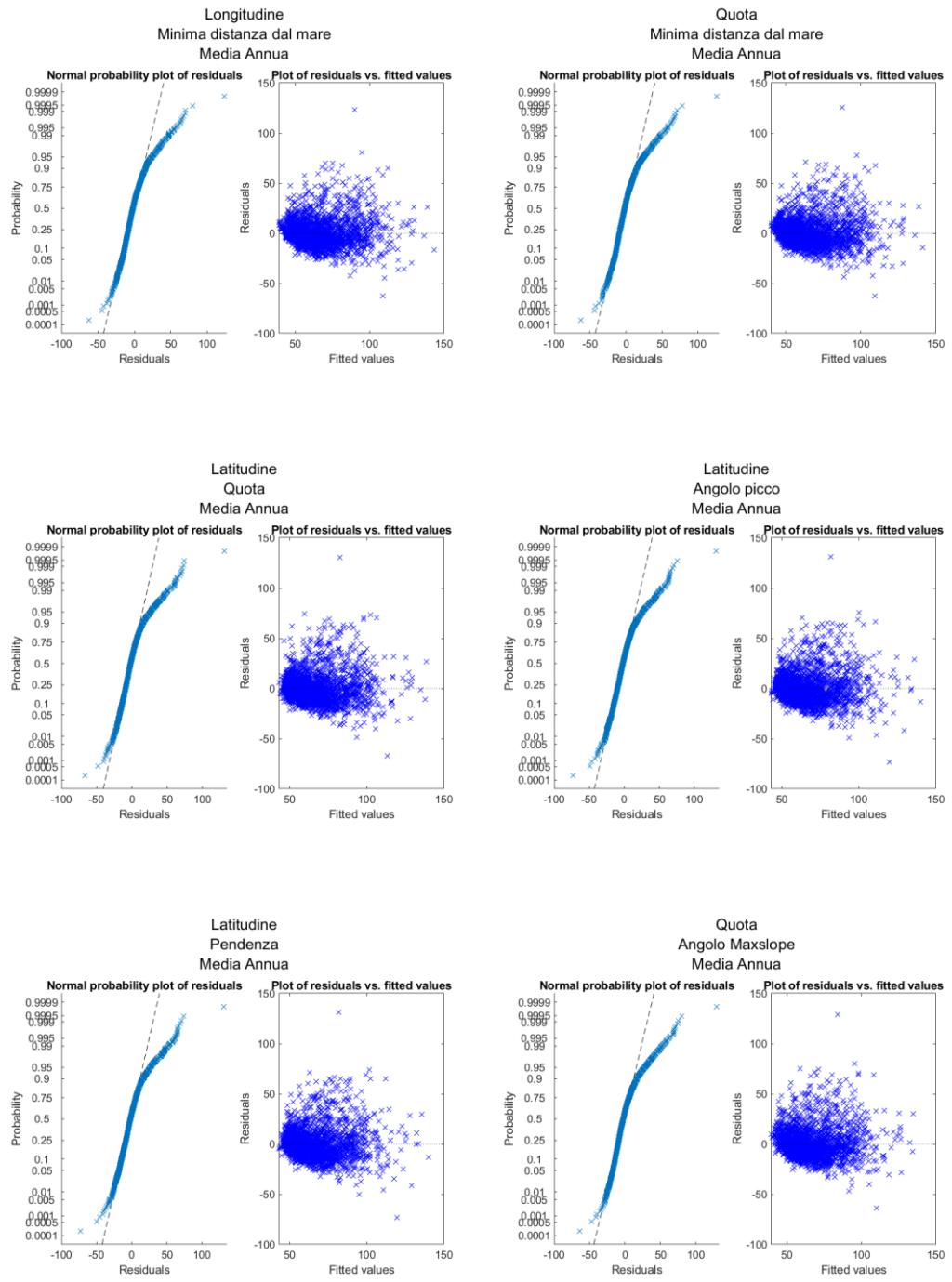


Tabella 49. Regressione 12h con media degli estremi, 3 variabili, area Appennini.

	<b>Variabili</b>		<b>R<sup>2</sup></b>	<b>R<sup>2</sup><sub>adj</sub></b>	<b>β<sub>0</sub></b>	<b>β<sub>1</sub></b>	<b>β<sub>2</sub></b>	<b>β<sub>3</sub></b>	<b>VIF 1</b>	<b>VIF 2</b>	<b>VIF 3</b>
Longitudine	Min Dist. dal Mare	Media annua	0.568	0.567	3.98E+01	-9.01E-06	-1.94E-01	4.05E-02	1.20	1.17	1.04
Quota	Min Dist. dal Mare	Media annua	0.564	0.563	3.06E+01	-3.91E-03	-1.68E-01	4.30E-02	1.22	1.01	1.21
Latitudine	Quota	Media annua	0.527	0.526	9.25E+01	-1.53E-05	-1.11E-02	4.92E-02	1.27	1.41	1.46
Latitudine	Angolo picco	Media annua	0.507	0.506	7.54E+01	-1.14E-05	-1.41E-01	4.52E-02	1.21	1.40	1.49
Latitudine	Pendenza	Media annua	0.507	0.506	7.37E+01	-1.10E-05	-7.80E-02	4.46E-02	1.13	1.15	1.24
Quota	Angolo maxslope	Media annua	0.497	0.497	2.46E+01	-6.47E-03	1.28E-01	4.25E-02	1.24	1.44	1.53
Longitudine	Quota	Media annua	0.497	0.497	2.04E+01	4.10E-06	-6.56E-03	4.46E-02	1.07	1.25	1.28
Quota	Angolo picco	Media annua	0.497	0.497	2.41E+01	-6.97E-03	1.71E-01	4.30E-02	1.35	1.41	1.35
Quota	Pendenza	Media annua	0.497	0.496	2.40E+01	-6.88E-03	9.39E-02	4.36E-02	1.39	1.27	1.23
Quota	Openness	Media annua	0.497	0.496	4.67E+01	-6.22E-03	-1.41E+01	4.29E-02	1.22	1.38	1.52

*Figura 51. Diagrammi diagnostici per regressione 12h con media degli estremi, 3 variabili, area Appennini*



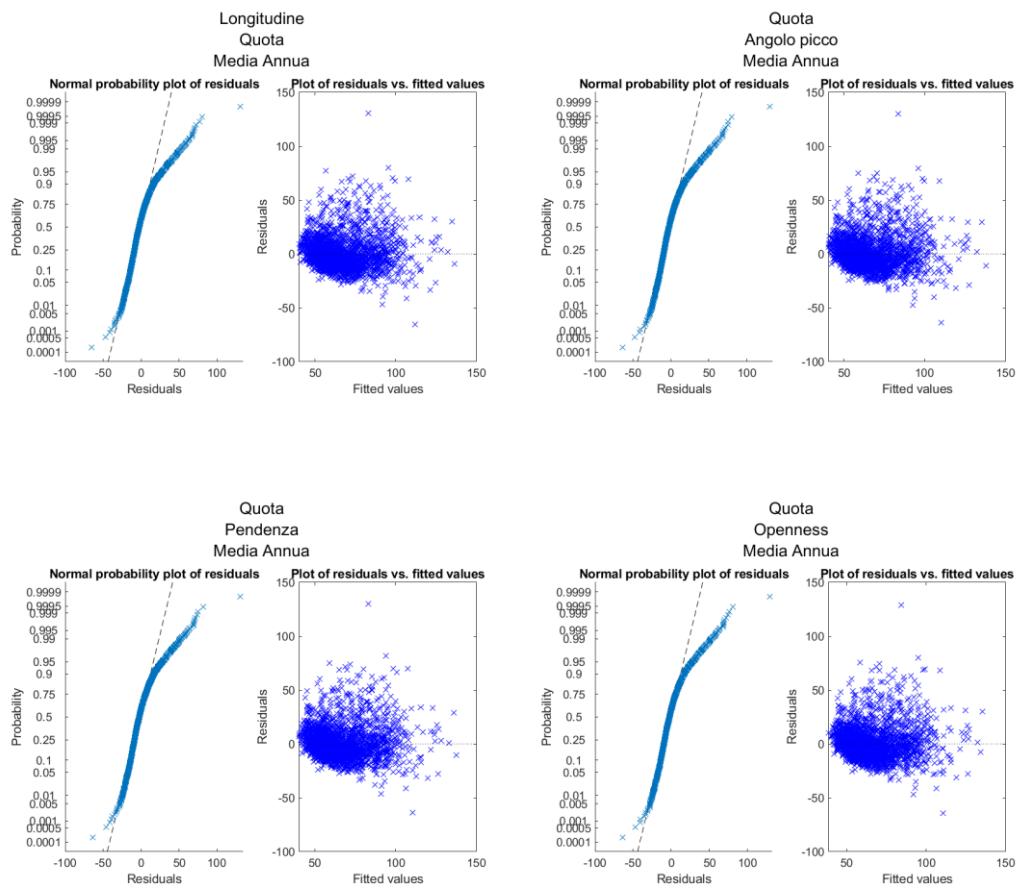
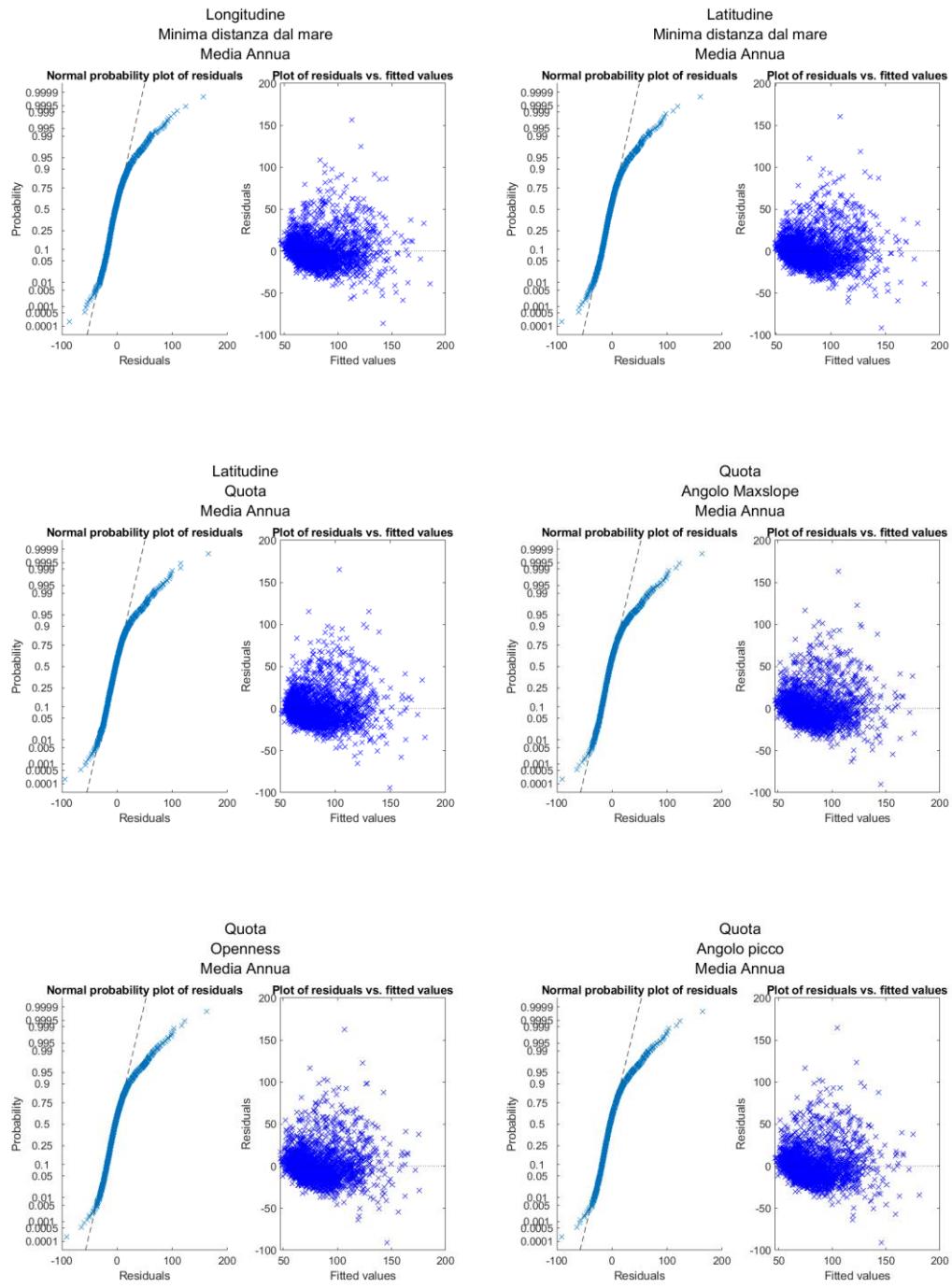
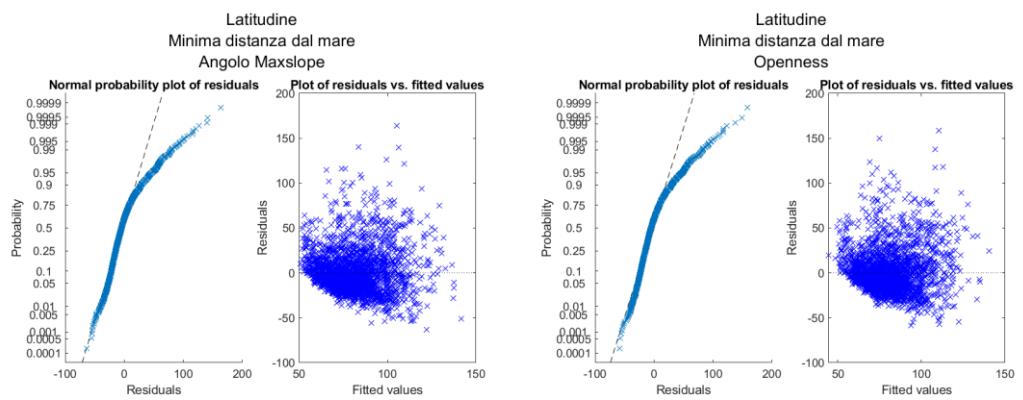
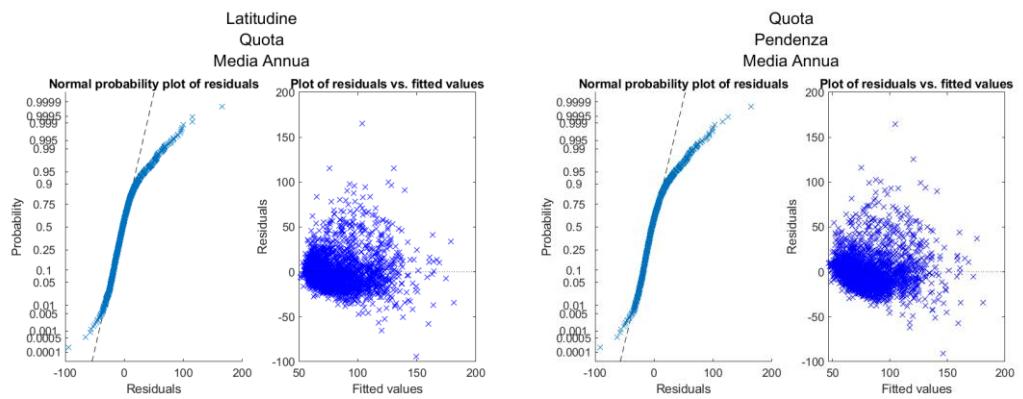


Tabella 50. Regressione 24h con media degli estremi, 3 variabili, area Appennini.

	<b>Variabili</b>		<b>R<sup>2</sup></b>	<b>R<sup>2</sup><sub>adj</sub></b>	<b>β<sub>0</sub></b>	<b>β<sub>1</sub></b>	<b>β<sub>2</sub></b>	<b>β<sub>3</sub></b>	<b>VIF 1</b>	<b>VIF 2</b>	<b>VIF 3</b>
Longitudine	Min Dist. dal Mare	Media annua	0.567	0.566	4.29E+01	-1.01E-05	-2.22E-01	5.52E-02	1.20	1.17	1.04
Latitudine	Min Dist. dal Mare	Media annua	0.563	0.563	5.02E+01	-3.97E-06	-1.83E-01	5.72E-02	1.35	1.25	1.11
Latitudine	Quota	Media annua	0.533	0.532	1.05E+02	-1.78E-05	-8.52E-03	6.36E-02	1.27	1.41	1.46
Quota	Angolo maxslope	Media annua	0.511	0.511	2.61E+01	-3.31E-03	1.97E-01	5.52E-02	1.24	1.44	1.53
Quota	Openness	Media annua	0.511	0.510	6.89E+01	-3.02E-03	2.73E+01	5.55E-02	1.22	1.38	1.52
Quota	Angolo picco	Media annua	0.510	0.509	2.53E+01	-3.63E-03	1.83E-01	5.64E-02	1.35	1.41	1.35
Longitudine	Quota	Media annua	0.510	0.509	2.19E+01	3.74E-06	-3.10E-03	5.80E-02	1.07	1.25	1.28
Quota	Pendenza	Media annua	0.510	0.509	2.51E+01	-3.55E-03	1.03E-01	5.70E-02	1.39	1.27	1.23
Latitudine	Min Dist. dal Mare	Angolo maxslope	0.268	0.267	4.59E+01	2.66E-05	-2.61E-01	1.46E+00	1.23	1.22	1.02
Latitudine	Min Dist. dal Mare	Openness	0.256	0.255	3.01E+02	2.52E-05	-2.68E-01	2.16E+02	1.23	1.22	1.01

*Figura 52. Diagrammi diagnostici per regressione 24h con media degli estremi, 3 variabili, area Appennini*





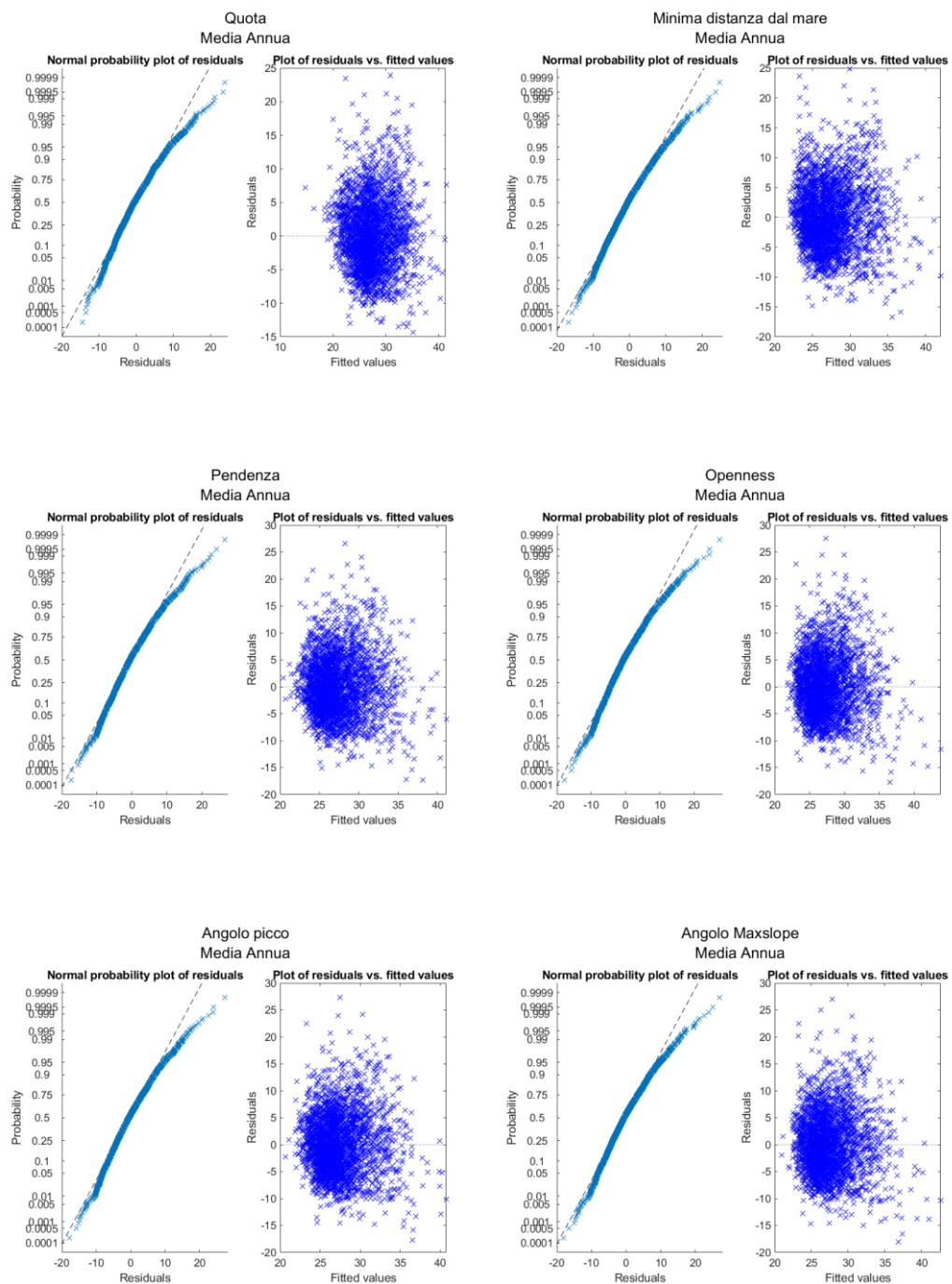
## ***Regressioni con la mediana delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h***

Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la mediana degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l'area Appenninica. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 51. Regressione 1h con mediana degli estremi, 2 variabili, area Appennini.*

<b>Variabili</b>		<b>R<sup>2</sup></b>	<b>R<sup>2</sup><sub>adj</sub></b>	<b>β<sub>0</sub></b>	<b>β<sub>1</sub></b>	<b>β<sub>2</sub></b>
Quota	Media Annuia	0.306	0.305	1.95E+01	-7.19E-03	1.05E-02
Minima distanza dal mare	Media Annuia	0.233	0.233	2.11E+01	-3.94E-02	7.77E-03
Pendenza	Media Annuia	0.209	0.209	1.98E+01	-1.11E-01	8.57E-03
Openness	Media Annuia	0.208	0.208	-9.63E+00	1.83E+01	9.20E-03
Angolo picco	Media Annuia	0.203	0.202	1.96E+01	-1.31E-01	8.78E-03
Angolo Maxslope	Media Annuia	0.203	0.202	1.92E+01	-9.86E-02	9.00E-03
Latitudine	Media Annuia	0.193	0.193	1.50E+01	1.04E-06	7.57E-03
Longitudine	Minima distanza dal mare	0.083	0.082	3.43E+01	-6.25E-06	-5.53E-02
Minima distanza dal mare	Angolo Maxslope	0.059	0.058	2.79E+01	-3.78E-02	9.70E-02
Quota	Angolo Maxslope	0.056	0.055	2.73E+01	-3.87E-03	1.65E-01

*Figura 53. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 2 variabili, area Appennini*



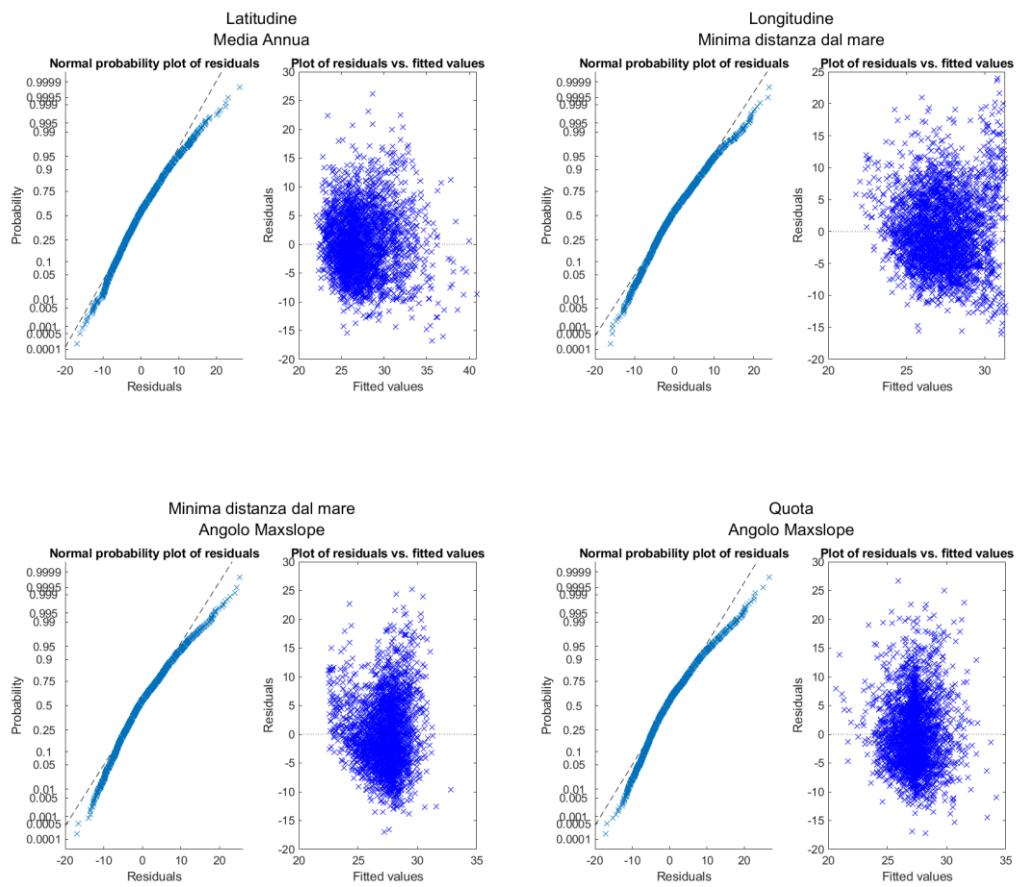
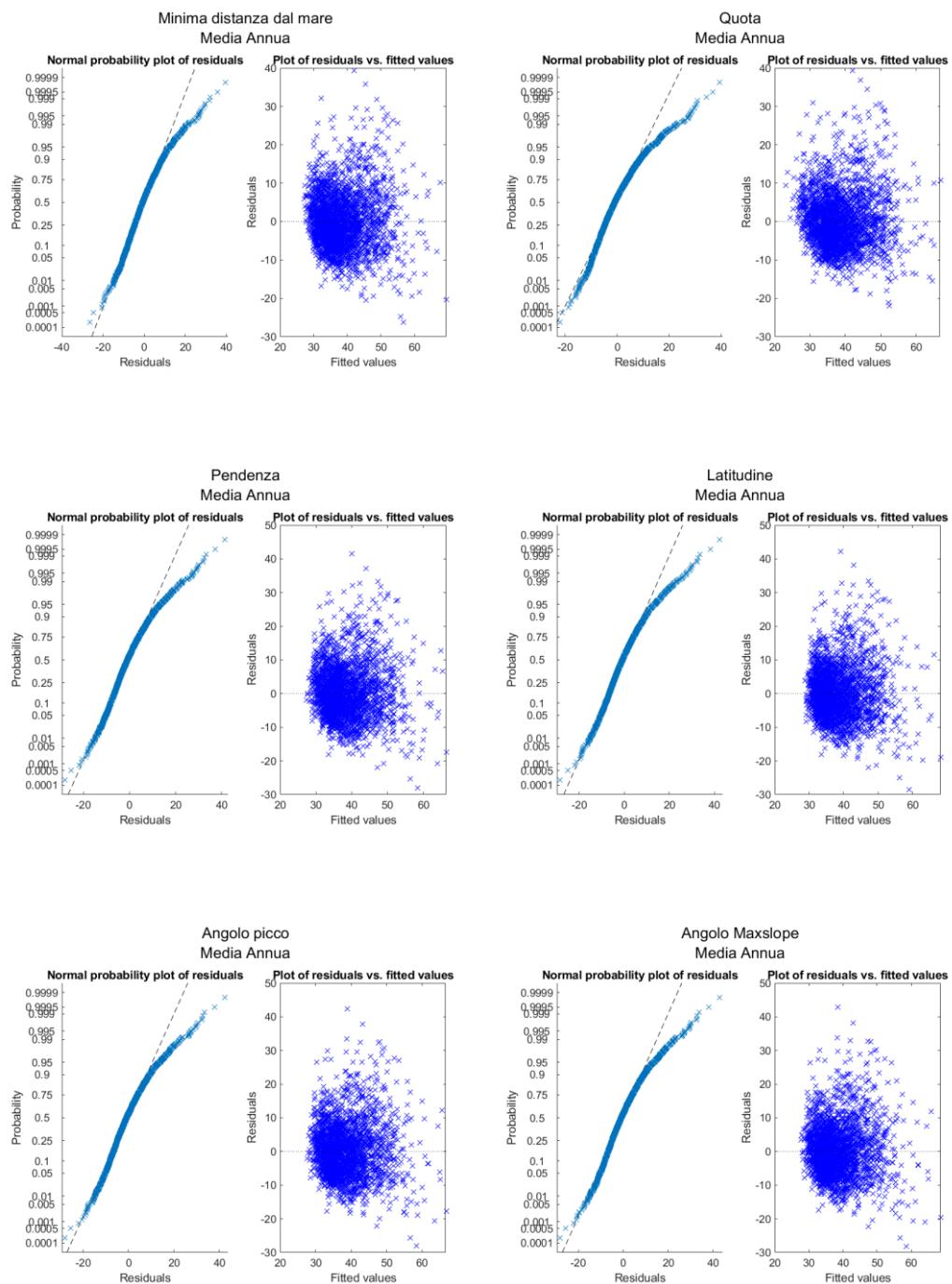


Tabella 52. Regressione 3h con mediana degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annua	0.437	0.437	2.46E+01	-7.67E-02	1.67E-02
Quota	Media Annua	0.437	0.436	2.15E+01	-8.44E-03	1.99E-02
Pendenza	Media Annua	0.375	0.374	2.18E+01	-8.62E-02	1.73E-02
Latitudine	Media Annua	0.373	0.372	3.02E+01	-1.91E-06	1.71E-02
Angolo picco	Media Annua	0.373	0.372	2.16E+01	-9.33E-02	1.74E-02
Angolo Maxslope	Media Annua	0.372	0.371	2.14E+01	-6.03E-02	1.74E-02
Minima distanza dal mare	Angolo Maxslope	0.140	0.140	3.82E+01	-7.05E-02	3.20E-01
Minima distanza dal mare	Openness	0.128	0.128	1.09E+02	-7.32E-02	-4.48E+01
Longitudine	Minima distanza dal mare	0.115	0.114	5.02E+01	-1.03E-05	-1.03E-01
Minima distanza dal mare	Angolo picco	0.112	0.111	3.84E+01	-7.13E-02	3.43E-01

*Figura 54. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 2 variabili, area Appennini*



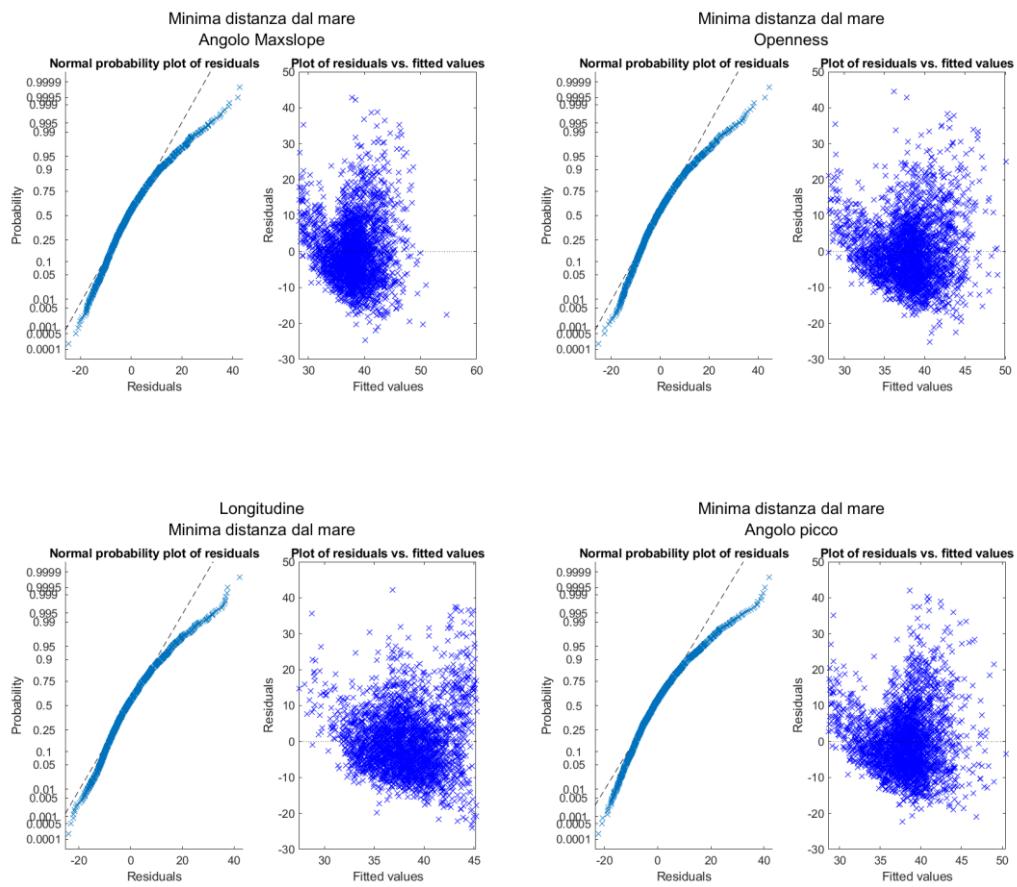
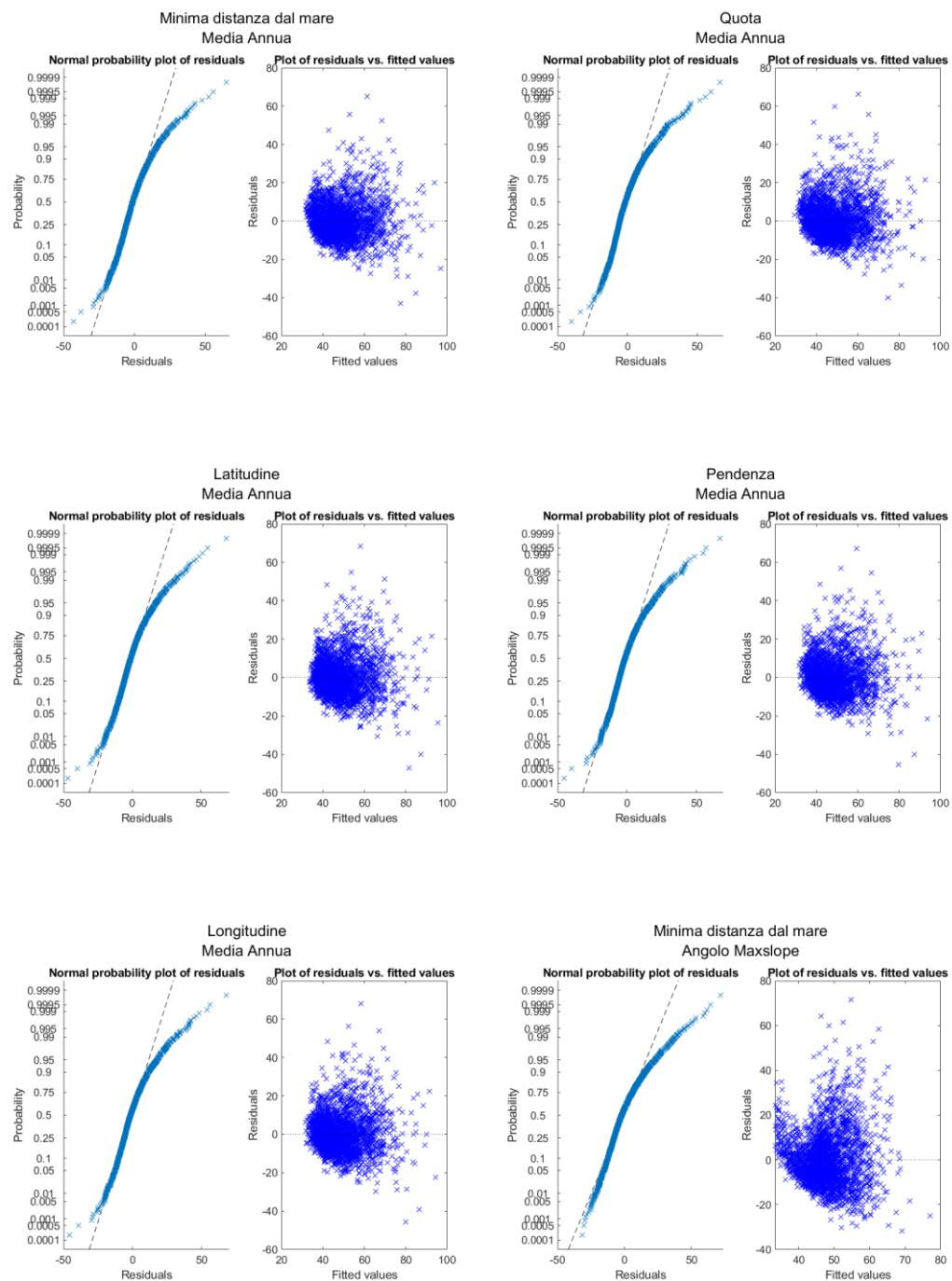


Tabella 53. Regressione 6h con mediana degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annuia	0.536	0.535	2.57E+01	-1.06E-01	2.64E-02
Quota	Media Annuia	0.495	0.495	2.15E+01	-7.27E-03	2.92E-02
Latitudine	Media Annuia	0.481	0.481	4.63E+01	-5.49E-06	2.76E-02
Pendenza	Media Annuia	0.471	0.471	2.17E+01	-5.68E-02	2.68E-02
Longitudine	Media Annuia	0.471	0.471	2.00E+01	1.81E-06	2.66E-02
Minima distanza dal mare	Angolo Maxslope	0.189	0.188	4.65E+01	-9.43E-02	5.88E-01
Minima distanza dal mare	Openness	0.181	0.180	1.84E+02	-9.88E-02	-8.73E+01
Latitudine	Angolo Maxslope	0.158	0.158	8.69E+00	7.17E-06	6.56E-01
Longitudine	Angolo Maxslope	0.148	0.147	4.76E+01	-6.30E-06	6.28E-01
Minima distanza dal mare	Angolo picco	0.148	0.147	4.66E+01	-9.51E-02	6.65E-01

*Figura 55. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 2 variabili, area Appennini*



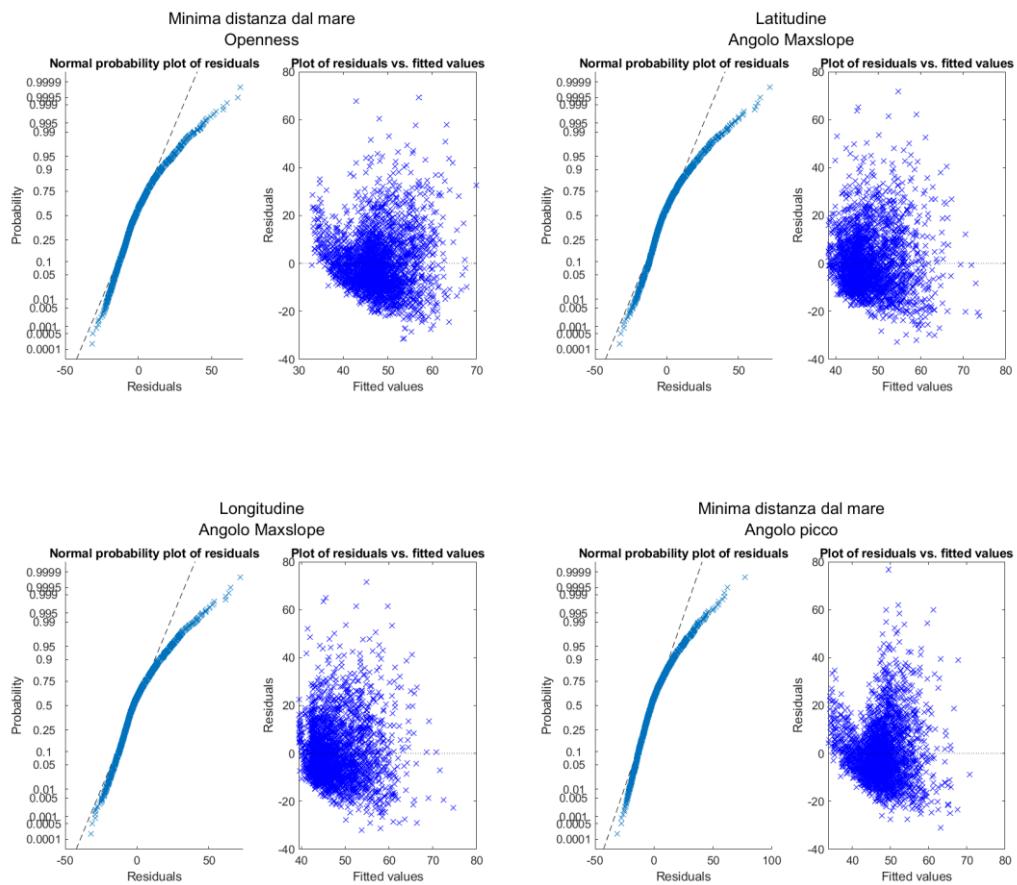
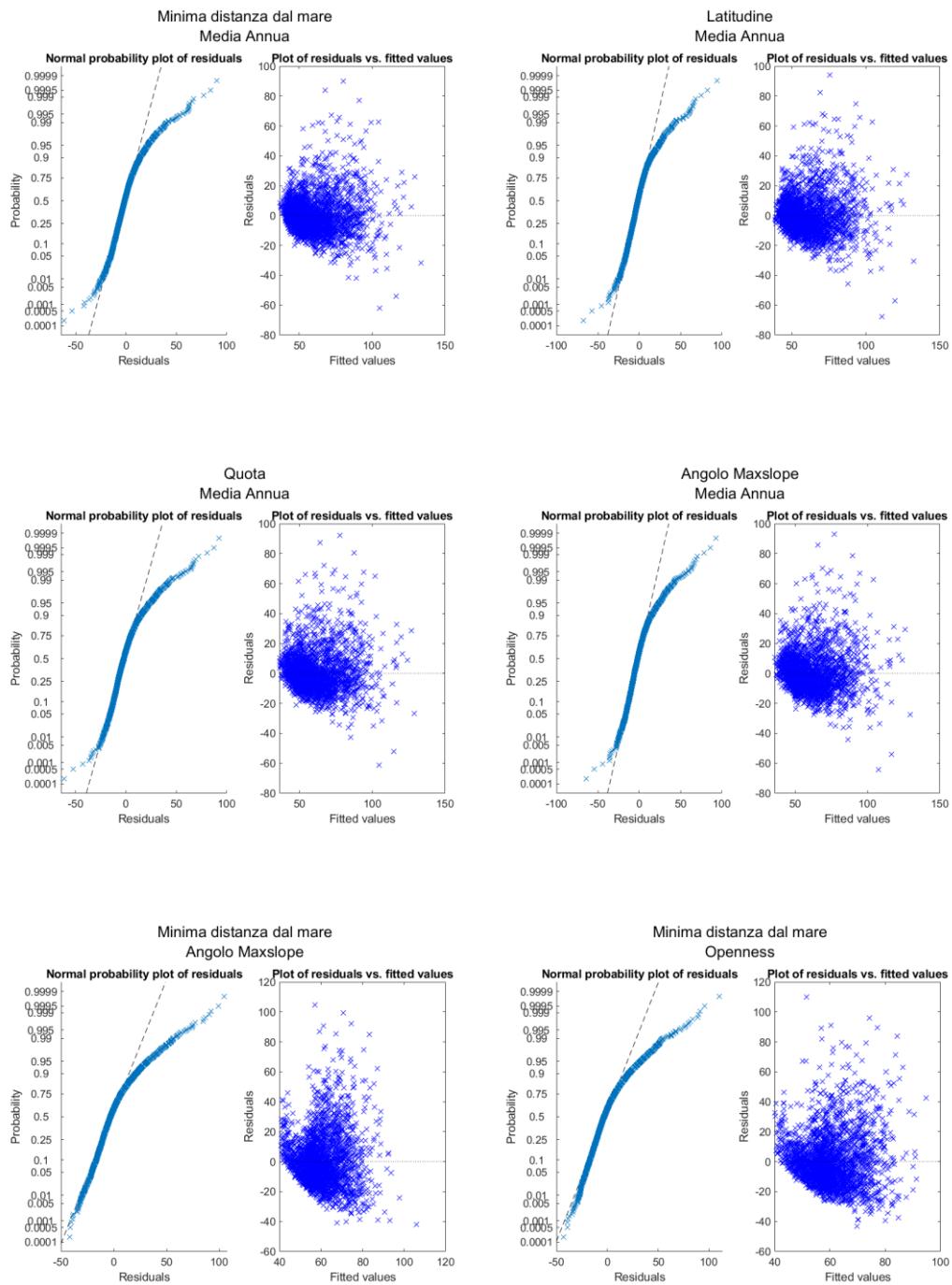


Tabella 54. Regressione 12h con mediana degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annua	0.581	0.581	2.61E+01	-1.36E-01	3.97E-02
Latitudine	Media Annua	0.540	0.540	5.77E+01	-8.20E-06	4.16E-02
Quota	Media Annua	0.534	0.533	2.08E+01	-4.81E-03	4.17E-02
Angolo Maxslope	Media Annua	0.529	0.529	2.12E+01	7.41E-02	3.89E-02
Minima distanza dal mare	Angolo Maxslope	0.208	0.207	5.70E+01	-1.17E-01	9.37E-01
Minima distanza dal mare	Openness	0.199	0.198	2.78E+02	-1.24E-01	-1.40E+02
Longitudine	Angolo Maxslope	0.181	0.181	6.01E+01	-1.01E-05	9.88E-01
Quota	Angolo Maxslope	0.179	0.178	5.07E+01	6.25E-03	8.97E-01
Latitudine	Openness	0.174	0.173	2.43E+02	9.81E-06	-1.50E+02
Pendenza	Angolo Maxslope	0.172	0.171	5.15E+01	1.38E-01	9.26E-01

*Figura 56. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 2 variabili, area Appennini*



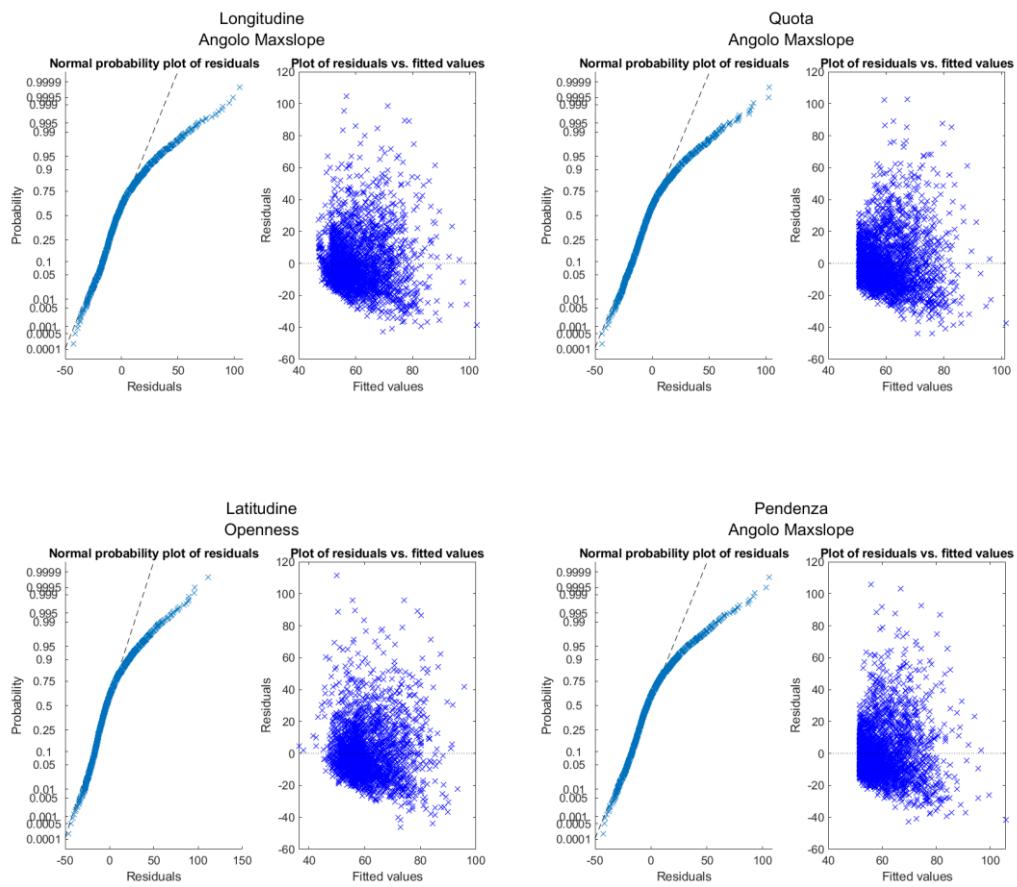
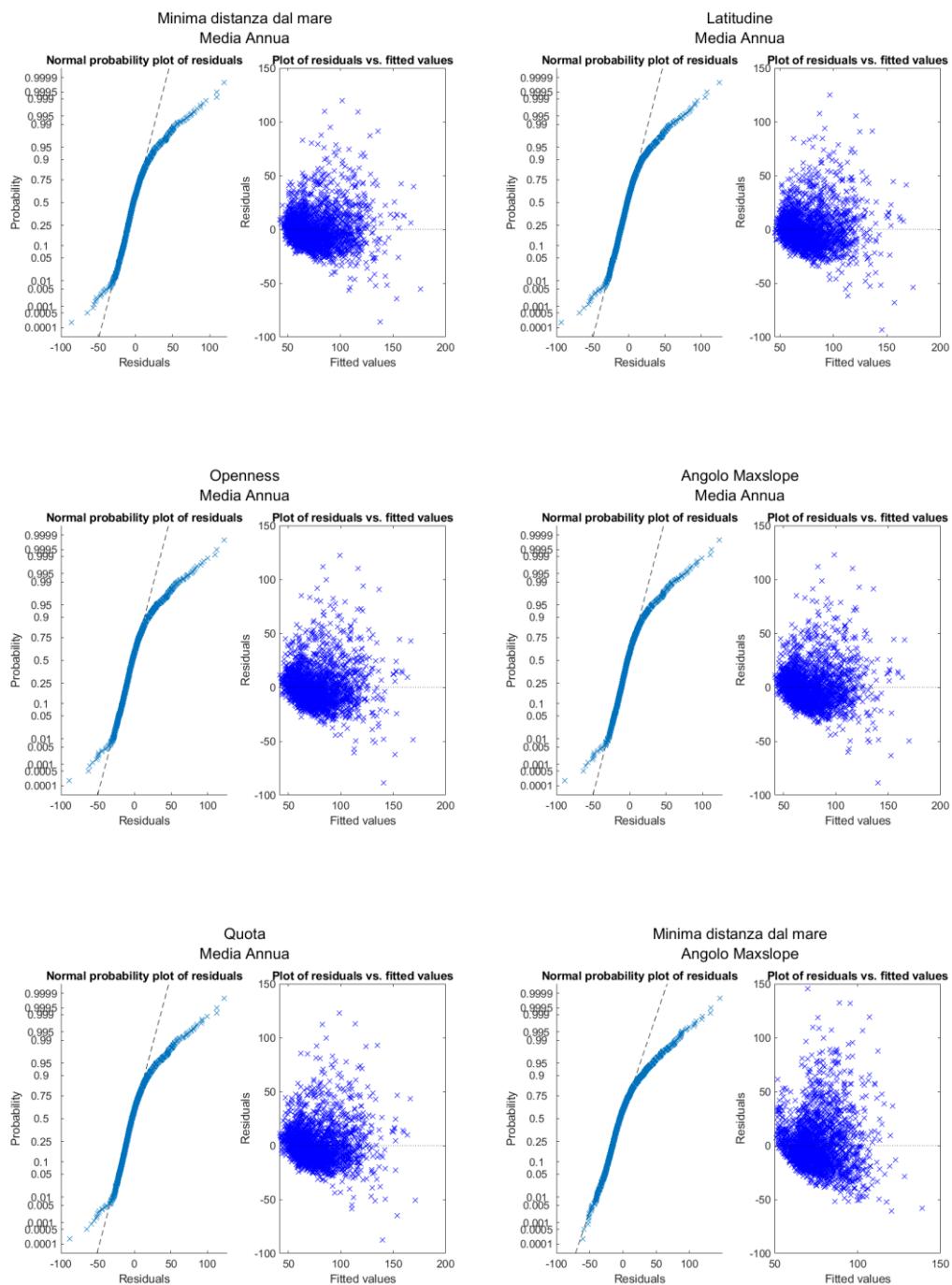


Tabella 55. Regressione 24h con mediana degli estremi, 2 variabili, area Appennini.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annuia	0.589	0.589	2.67E+01	-1.57E-01	5.50E-02
Latitudine	Media Annuia	0.563	0.563	7.06E+01	-1.11E-05	5.75E-02
Openness	Media Annuia	0.552	0.552	5.61E+01	-2.22E+01	5.34E-02
Angolo Maxslope	Media Annuia	0.552	0.551	2.12E+01	1.33E-01	5.34E-02
Quota	Media Annuia	0.551	0.551	2.06E+01	-2.45E-03	5.60E-02
Minima distanza dal mare	Angolo Maxslope	0.208	0.207	6.91E+01	-1.30E-01	1.33E+00
Minima distanza dal mare	Openness	0.203	0.202	3.87E+02	-1.39E-01	-2.01E+02
Quota	Angolo Maxslope	0.203	0.202	6.08E+01	1.24E-02	1.21E+00
Quota	Openness	0.200	0.200	3.47E+02	1.40E-02	-1.82E+02
Longitudine	Angolo Maxslope	0.196	0.195	7.52E+01	-1.45E-05	1.39E+00

*Figura 57. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 2 variabili, area Appennini*



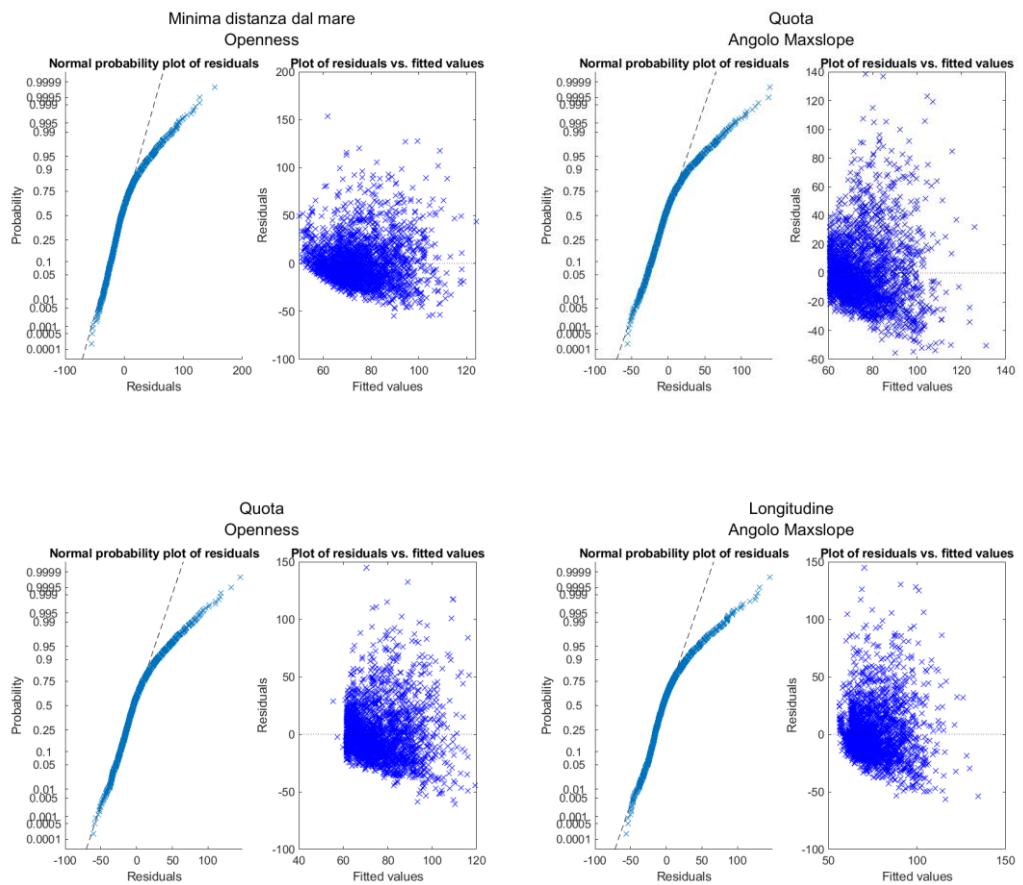
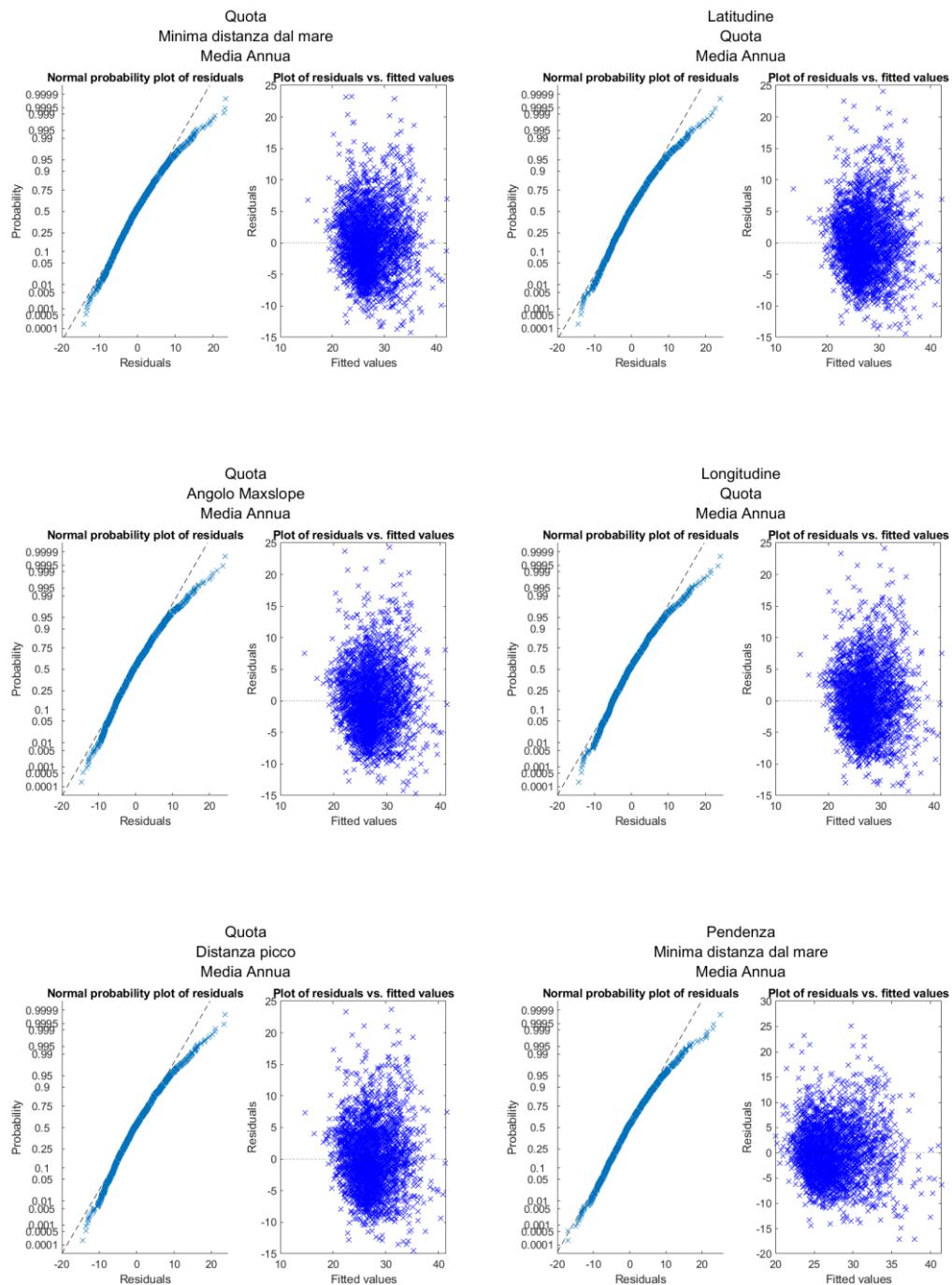


Tabella 56. Regressione 1h con mediana degli estremi, 3 variabili, area Appennini.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Quota	Minima distanza dal mare	Media Annua	0.334	0.334	2.07E+01	-6.79E-03	-3.25E-02	1.04E-02
Latitudine	Quota	Media Annua	0.314	0.314	3.01E+01	-2.36E-06	-7.98E-03	1.14E-02
Quota	Angolo Maxslope	Media Annua	0.309	0.308	1.93E+01	-7.01E-03	-5.10E-02	1.11E-02
Longitudine	Quota	Media Annua	0.307	0.306	1.85E+01	1.02E-06	-7.33E-03	1.07E-02
Quota	Distanza picco	Media Annua	0.307	0.306	1.97E+01	-7.31E-03	-4.55E-05	1.06E-02
Pendenza	Minima distanza dal mare	Media Annua	0.257	0.256	2.14E+01	-1.26E-01	-4.18E-02	8.64E-03
Minima distanza dal mare	Openness	Media Annua	0.255	0.254	1.16E+01	-4.15E-02	2.05E+01	9.34E-03
Minima distanza dal mare	Angolo picco	Media Annua	0.251	0.250	2.12E+01	-4.26E-02	-1.63E-01	8.99E-03
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.250	0.250	2.07E+01	-4.22E-02	-1.21E-01	9.25E-03
Longitudine	Minima distanza dal mare	Media Annua	0.247	0.247	2.49E+01	-3.78E-06	-4.87E-02	7.36E-03

*Figura 58. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 3 variabili, area Appennini*



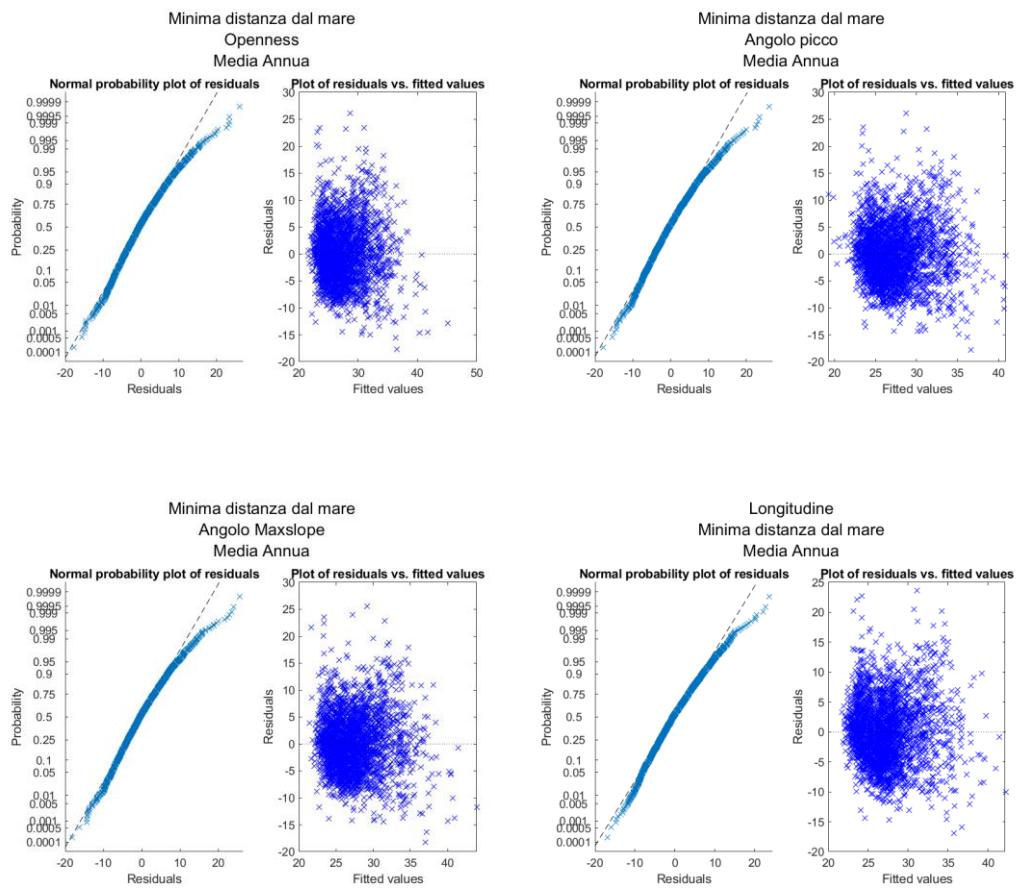
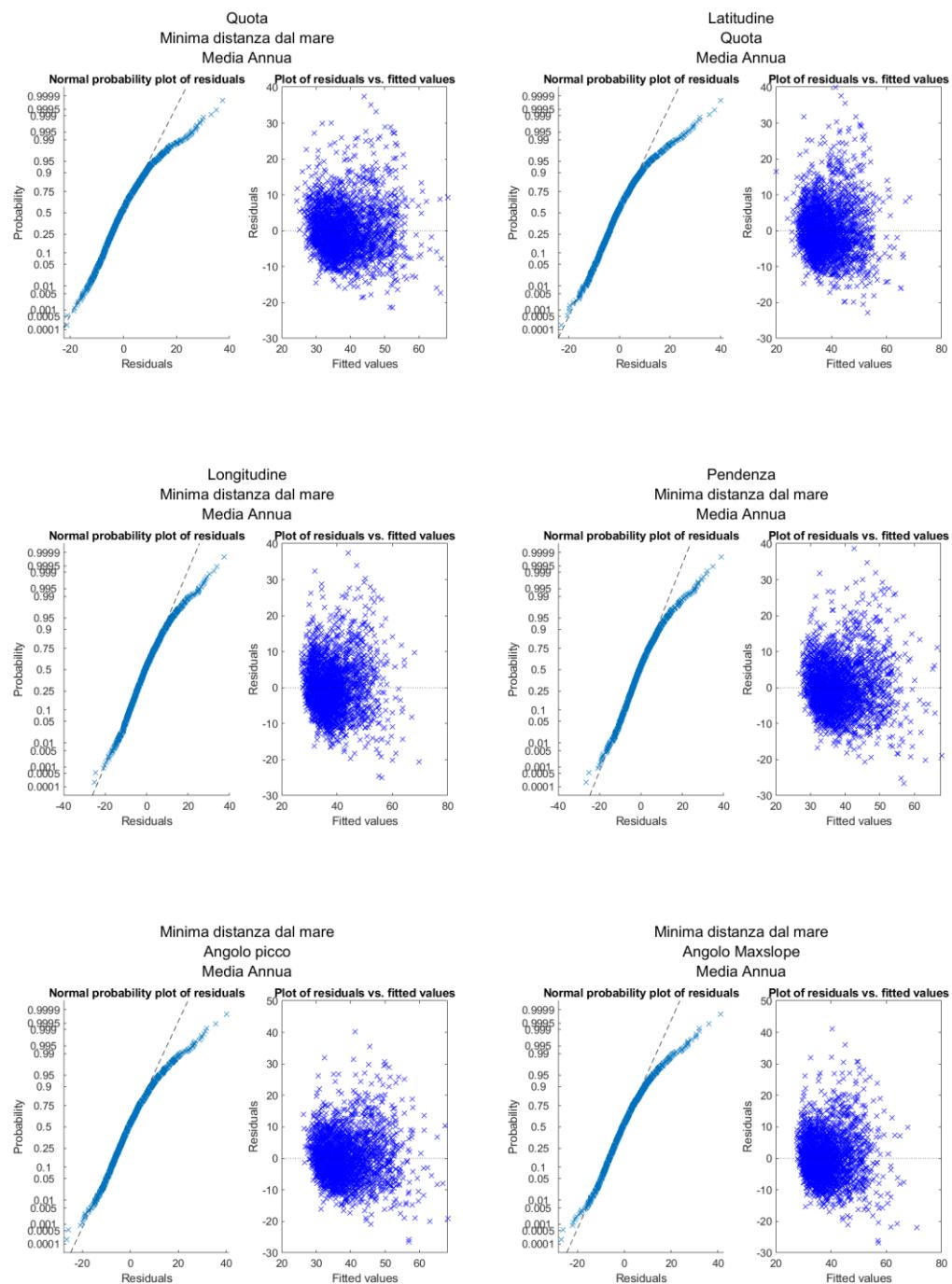


Tabella 57. Regressione 3h con mediana degli estremi, 3 variabili, area Appennini

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Quota	Minima distanza dal mare	Media Annua	0.490	0.490	2.42E+01	-7.58E-03	-6.90E-02	1.95E-02
Latitudine	Quota	Media Annua	0.462	0.462	5.02E+01	-6.41E-06	-1.06E-02	2.21E-02
Longitudine	Minima distanza dal mare	Media Annua	0.447	0.447	2.95E+01	-4.91E-06	-8.87E-02	1.61E-02
Pendenza	Minima distanza dal mare	Media Annua	0.445	0.445	2.49E+01	-1.13E-01	-7.88E-02	1.74E-02
Minima distanza dal mare	Angolo picco	Media Annua	0.444	0.444	2.47E+01	-7.97E-02	-1.54E-01	1.78E-02
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.443	0.442	2.43E+01	-7.90E-02	-1.02E-01	1.79E-02
Latitudine	Minima distanza dal mare	Media Annua	0.443	0.442	1.19E+01	2.93E-06	-8.71E-02	1.60E-02
Longitudine	Quota	Media Annua	0.440	0.439	1.91E+01	2.62E-06	-8.80E-03	2.03E-02
Minima distanza dal mare	Distanza picco	Media Annua	0.439	0.438	2.43E+01	-7.76E-02	8.06E-05	1.67E-02
Quota	Angolo picco	Media Annua	0.438	0.437	2.15E+01	-8.83E-03	6.99E-02	1.95E-02

*Figura 59. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 3 variabili, area Appennini*



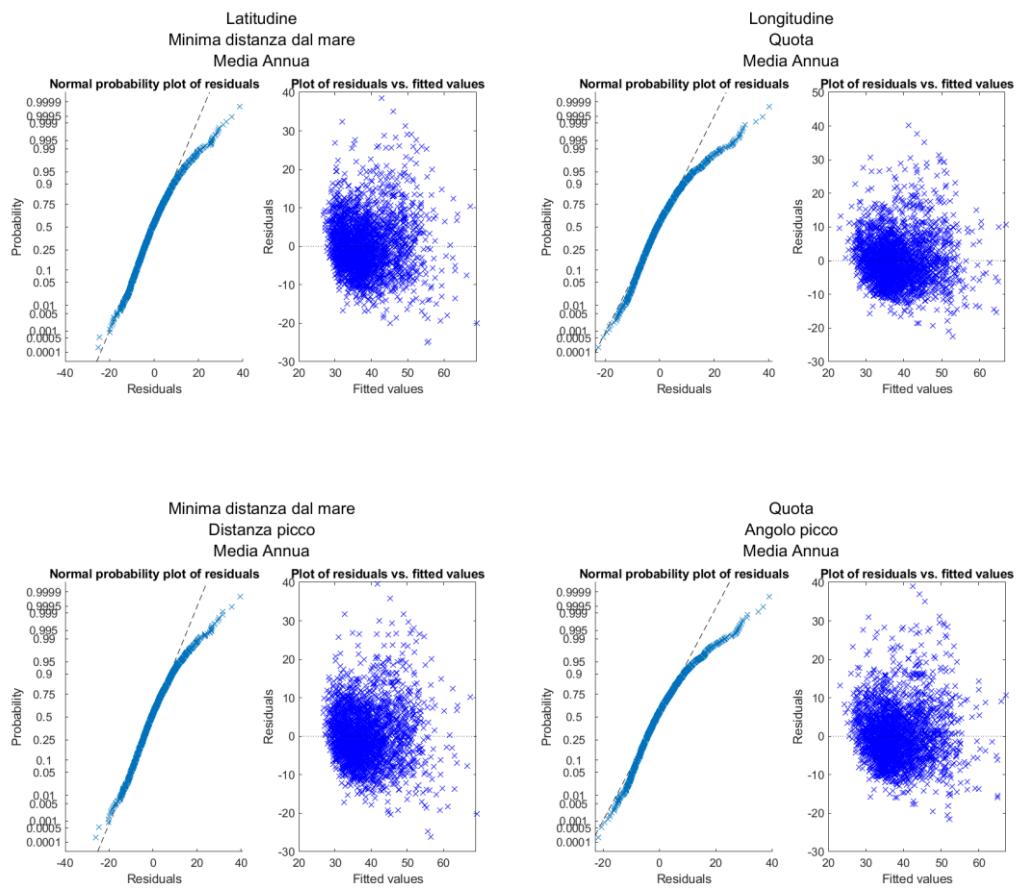
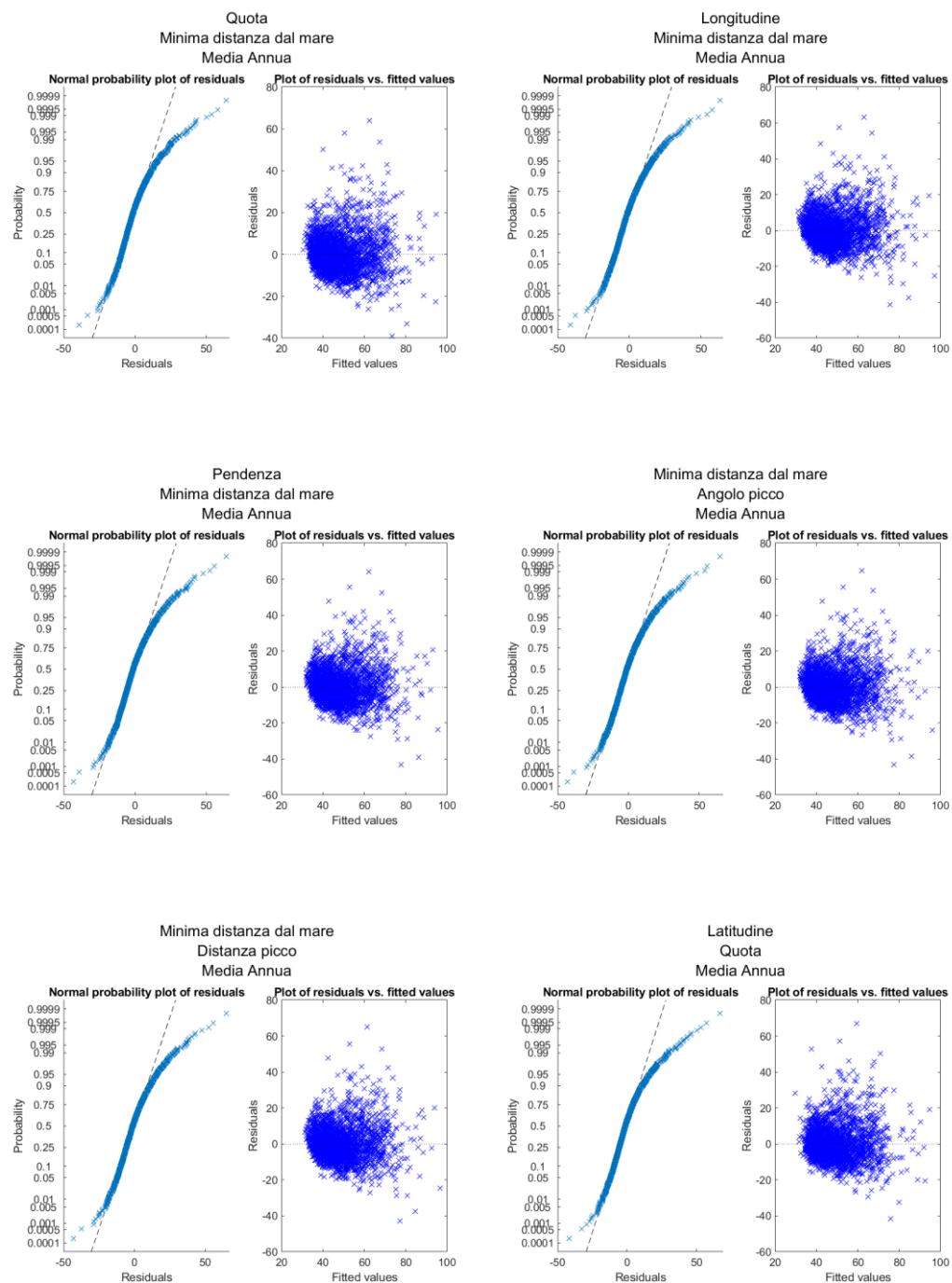


Tabella 58. Regressione 6h con mediana degli estremi, 3 variabili, area Appennini

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Quota	Minima distanza dal mare	Media Annua	0.553	0.552	2.54E+01	-6.02E-03	-1.00E-01	2.87E-02
Longitudine	Minima distanza dal mare	Media Annua	0.541	0.541	3.08E+01	-5.14E-06	-1.19E-01	2.58E-02
Pendenza	Minima distanza dal mare	Media Annua	0.539	0.538	2.59E+01	-9.41E-02	-1.08E-01	2.70E-02
Minima distanza dal mare	Angolo picco	Media Annua	0.537	0.536	2.58E+01	-1.08E-01	-9.14E-02	2.70E-02
Minima distanza dal mare	Distanza picco	Media Annua	0.536	0.536	2.54E+01	-1.07E-01	7.96E-05	2.64E-02
Latitudine	Quota	Media Annua	0.527	0.527	6.64E+01	-1.00E-05	-1.06E-02	3.27E-02
Longitudine	Quota	Media Annua	0.499	0.498	1.80E+01	3.88E-06	-7.79E-03	2.98E-02
Quota	Angolo picco	Media Annua	0.498	0.497	2.15E+01	-8.06E-03	1.40E-01	2.85E-02
Quota	Angolo Maxslope	Media Annua	0.496	0.496	2.17E+01	-7.49E-03	6.09E-02	2.85E-02
Quota	Pendenza	Media Annua	0.496	0.496	2.14E+01	-7.75E-03	5.17E-02	2.90E-02

*Figura 60. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 3 variabili, area Appennini*



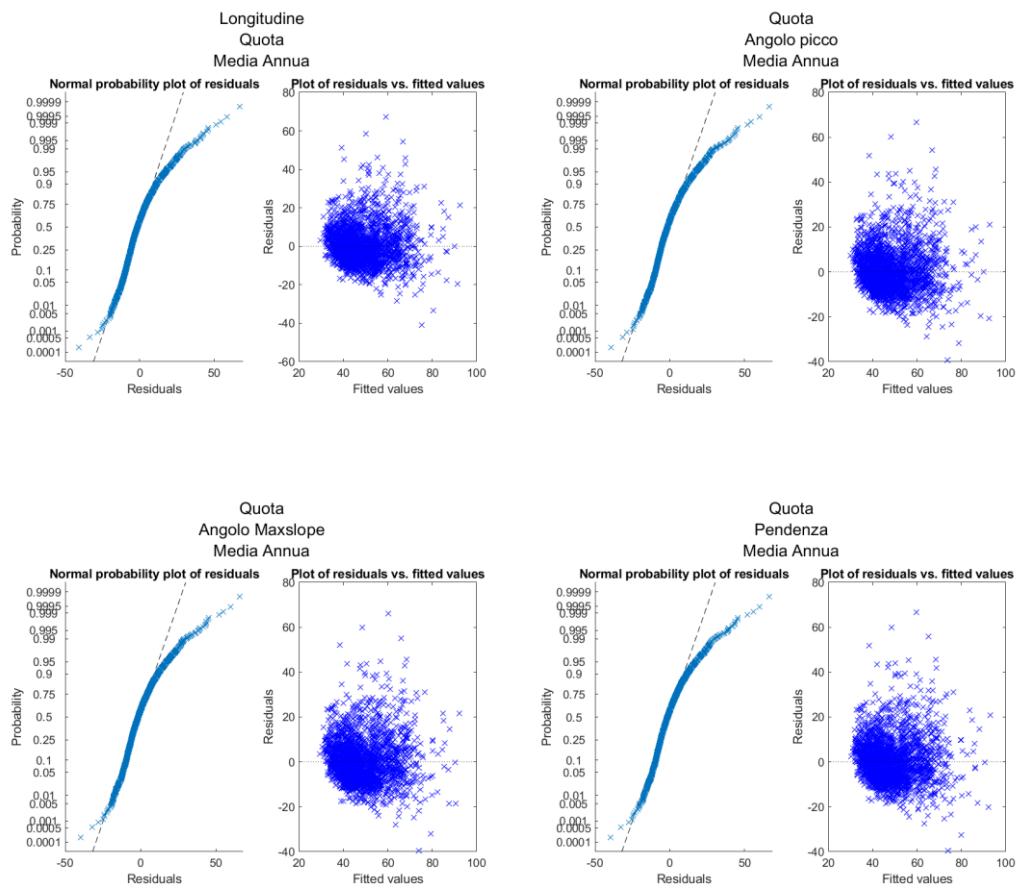
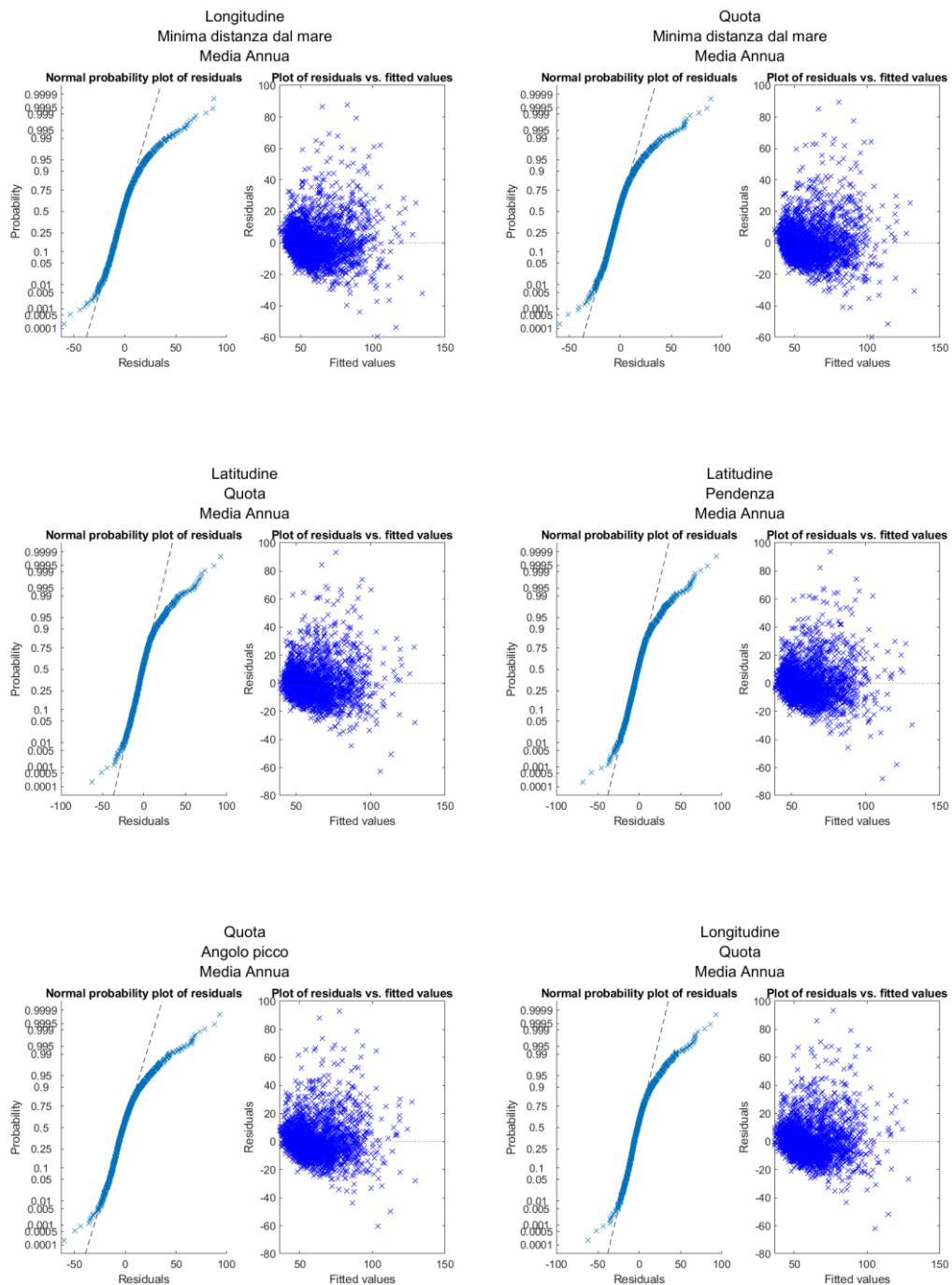


Tabella 59. Regressione 12h con mediana degli estremi, 3 variabili, area Appennini

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.586	0.585	3.27E+01	-6.74E-06	-1.52E-01	3.90E-02
Quota	Minima distanza dal mare	Media Annua	0.583	0.583	2.59E+01	-3.16E-03	-1.32E-01	4.09E-02
Latitudine	Quota	Media Annua	0.556	0.556	7.43E+01	-1.19E-05	-8.78E-03	4.58E-02
Latitudine	Pendenza	Media Annua	0.541	0.541	5.95E+01	-8.60E-06	-6.86E-02	4.22E-02
Quota	Angolo picco	Media Annua	0.535	0.535	2.08E+01	-5.71E-03	1.59E-01	4.08E-02
Longitudine	Quota	Media Annua	0.535	0.535	1.76E+01	3.57E-06	-5.29E-03	4.22E-02
Quota	Angolo Maxslope	Media Annua	0.535	0.535	2.12E+01	-5.20E-03	1.09E-01	4.05E-02
Quota	Openness	Media Annua	0.534	0.534	4.14E+01	-5.01E-03	-	4.07E-02
Latitudine	Minima distanza dal mare	Angolo Maxslope	0.275	0.275	-	3.71E+01	2.04E-05	-1.87E-01
Latitudine	Minima distanza dal mare	Openness	0.261	0.260	1.99E+02	1.95E-05	-1.92E-01	-
								1.47E+02

*Figura 61. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 3 variabili, area Appennini*



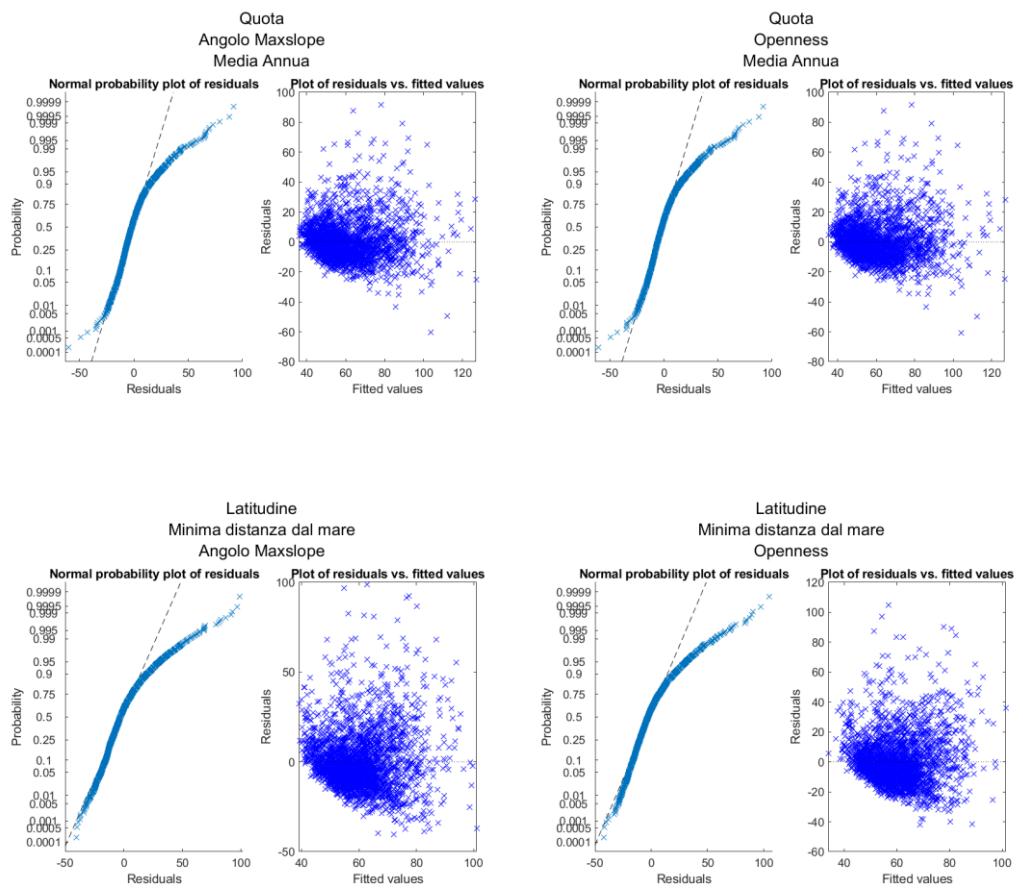
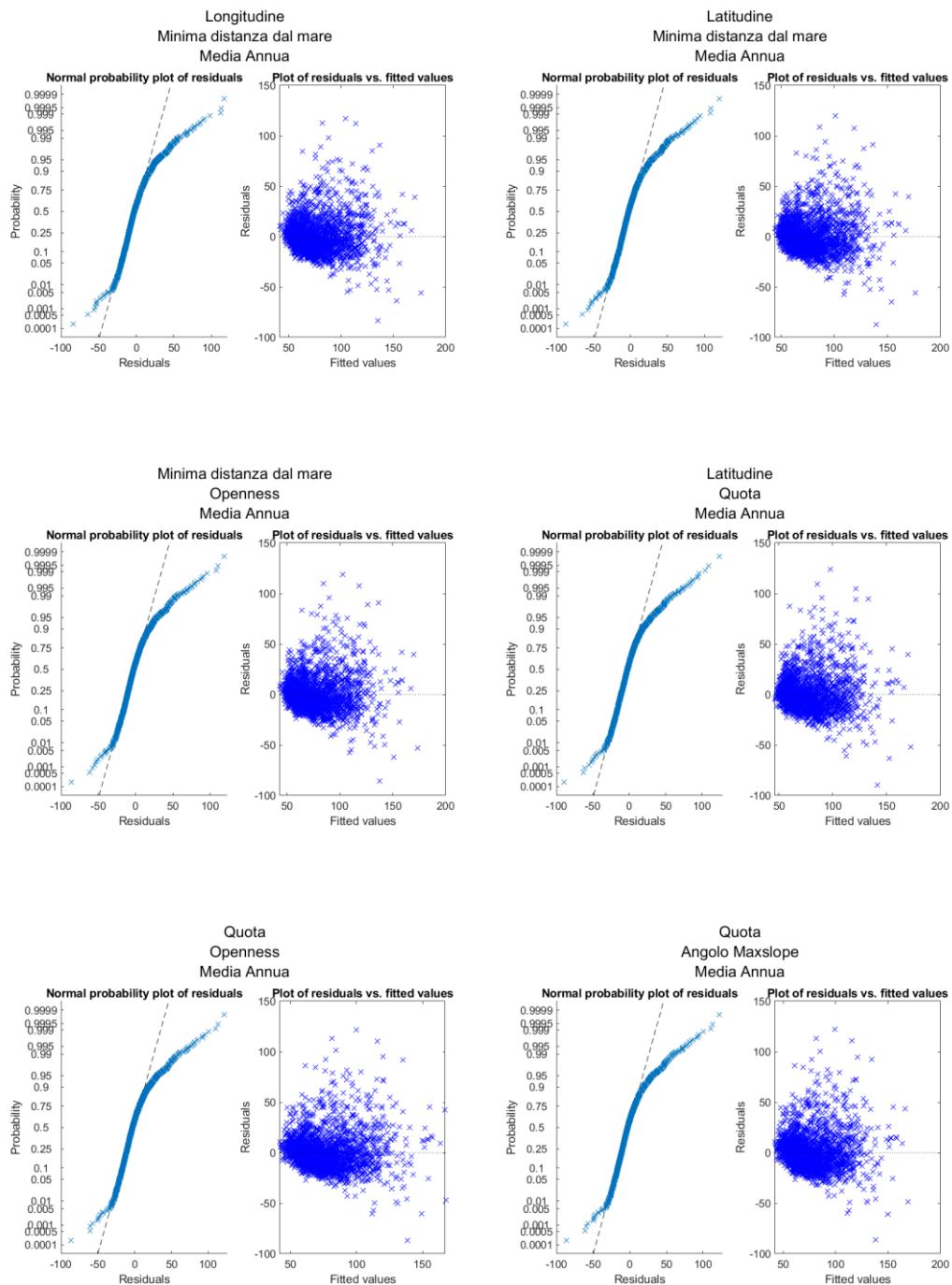
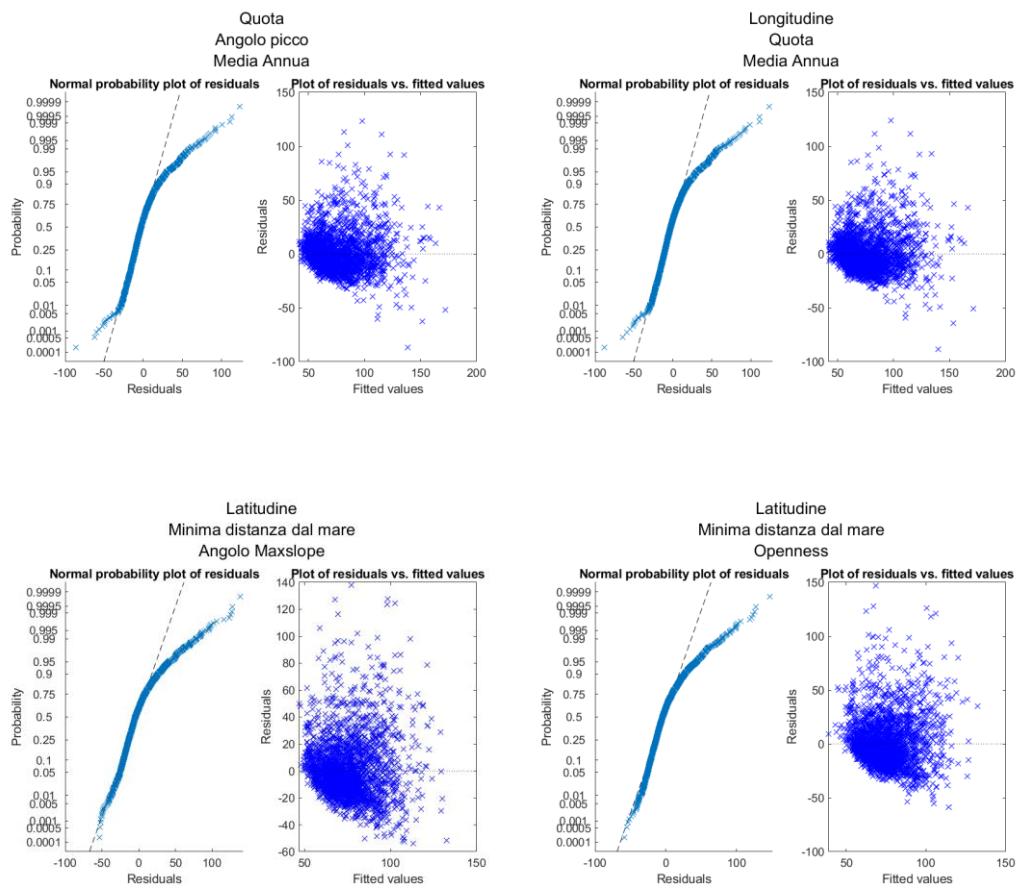


Tabella 60. Regressione 24h con mediana degli estremi, 3 variabili, area Appennini

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.593	0.592	3.45E+01	-7.92E-06	-1.76E-01	5.41E-02
Latitudine	Minima distanza dal mare	Media Annua	0.590	0.589	3.97E+01	-2.99E-06	-1.46E-01	5.56E-02
Minima distanza dal mare	Openness	Media Annua	0.590	0.589	4.88E+01	-1.55E-01	-	1.38E+01
Latitudine	Quota	Media Annua	0.569	0.568	8.41E+01	-1.42E-05	-7.16E-03	6.09E-02
Quota	Openness	Media Annua	0.553	0.553	5.91E+01	-2.83E-03	-	2.41E+01
Quota	Angolo Maxslope	Media Annua	0.553	0.552	2.12E+01	-3.00E-03	1.54E-01	5.43E-02
Quota	Angolo picco	Media Annua	0.552	0.552	2.06E+01	-3.30E-03	1.51E-01	5.52E-02
Longitudine	Quota	Media Annua	0.552	0.551	1.78E+01	3.15E-06	-2.88E-03	5.65E-02
Latitudine	Minima distanza dal mare	Angolo Maxslope	0.271	0.270	-	5.37E+01	2.67E-05	-2.22E-01
Latitudine	Minima distanza dal mare	Openness	0.260	0.259	2.85E+02	2.54E-05	-2.28E-01	-
								2.10E+02

*Figura 62. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 3 variabili, area Appennini*





**Allegato 7 – Regressioni lineari multiple per l’area Costiera**

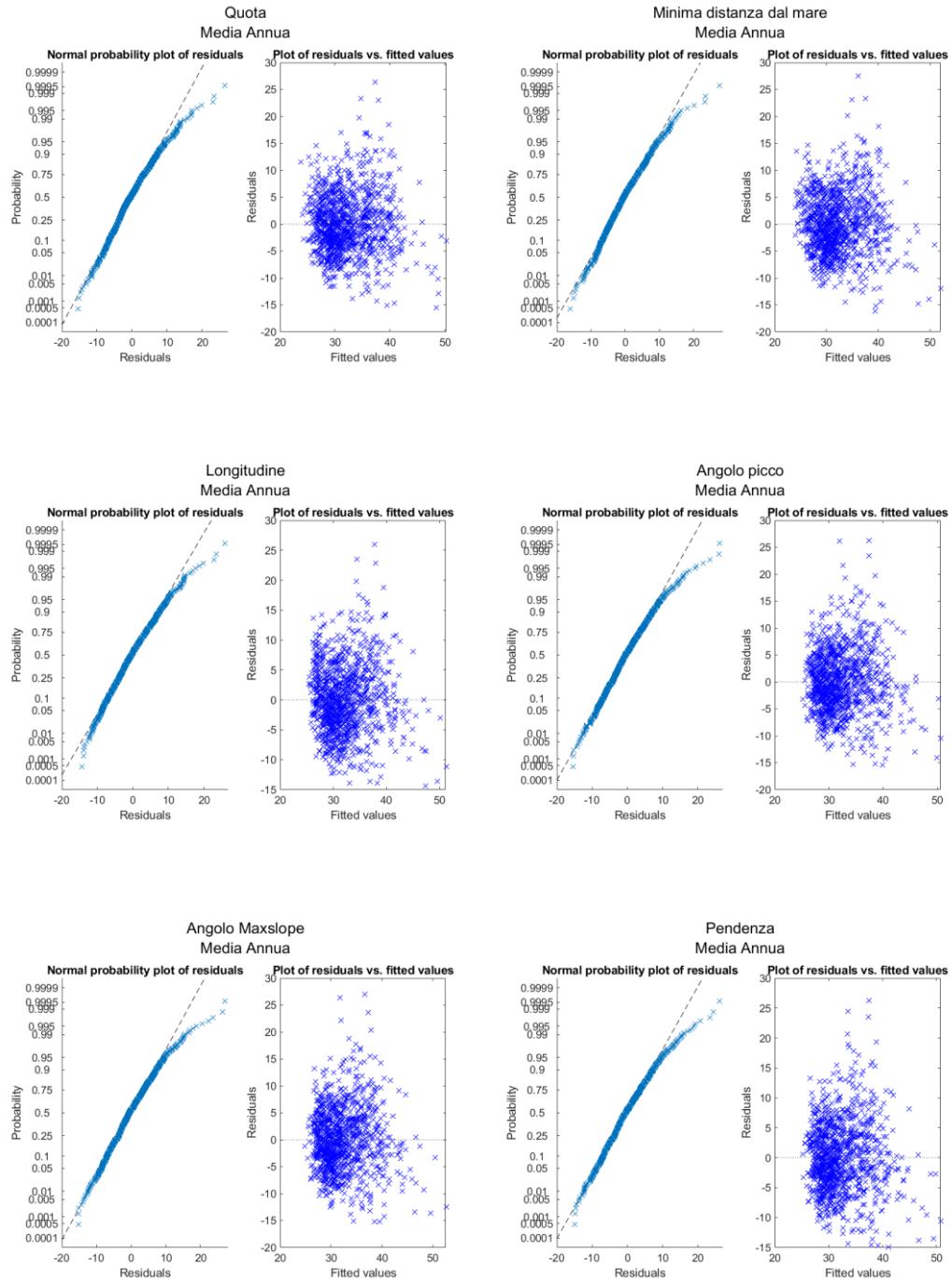
***Regressioni con la media delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h***

Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la media degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l’area Costiera. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 61. Regressione 1h con media degli estremi, 2 variabili, area Costa.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Quota	Media annua	0.382	0.381	2.09E+01	-6.44E-03	1.32E-02	1.31	1.31
Min Dist. dal Mare	Media annua	0.375	0.374	2.27E+01	-2.43E-01	1.19E-02	1.06	1.06
Longitudine	Media annua	0.347	0.346	2.47E+01	-3.27E-06	1.04E-02	1.08	1.08
Angolo picco	Media annua	0.344	0.343	2.15E+01	-1.24E-01	1.19E-02	1.31	1.31
Angolo maxslope	Media annua	0.341	0.339	2.13E+01	-7.09E-02	1.18E-02	1.40	1.40
Pendenza	Media annua	0.340	0.339	2.15E+01	-6.43E-02	1.14E-02	1.18	1.18
Latitudine	Angolo maxslope	0.185	0.183	-9.91E+00	8.68E-06	2.29E-01	1.00	1.00
Latitudine	Openness	0.177	0.176	4.43E+01	8.30E-06	-3.32E+01	1.00	1.00
Latitudine	Angolo picco	0.160	0.159	-9.57E+00	8.62E-06	2.55E-01	1.00	1.00
Latitudine	Pendenza	0.138	0.136	-7.00E+00	8.22E-06	1.46E-01	1.00	1.00

*Figura 63. Diagrammi diagnostici per regressione 1h con media degli estremi, 2 variabili, area Costa*



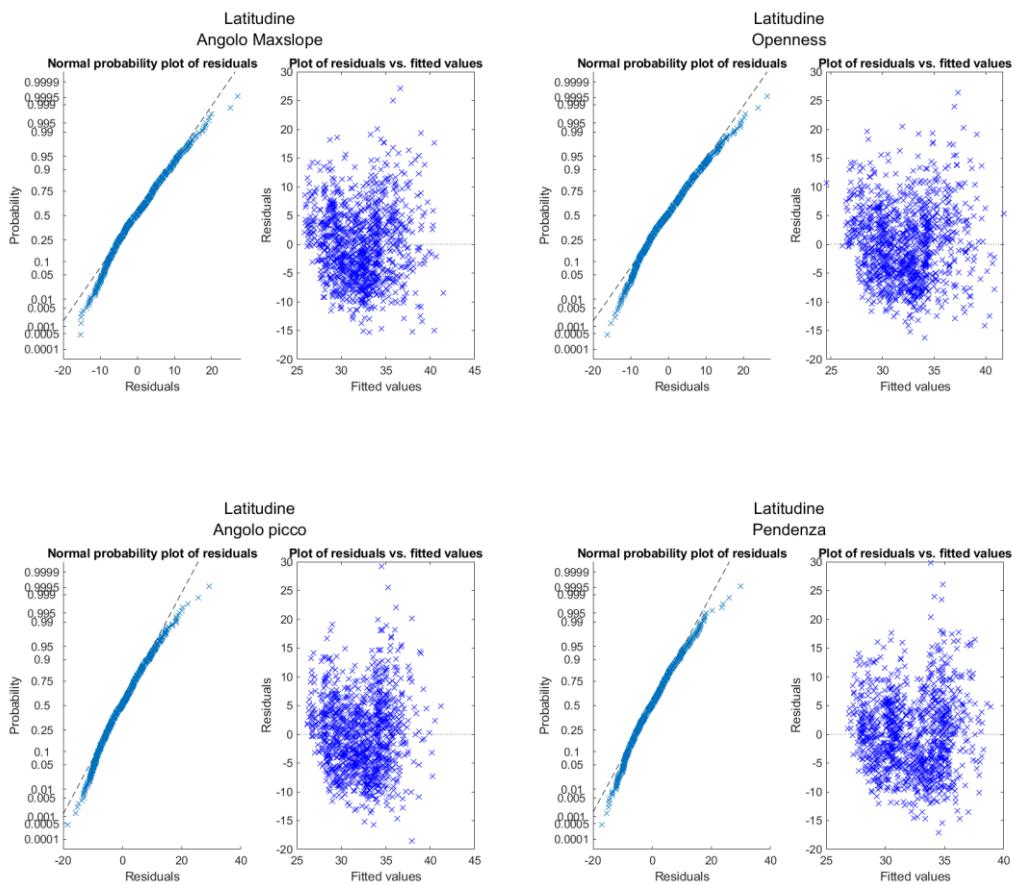
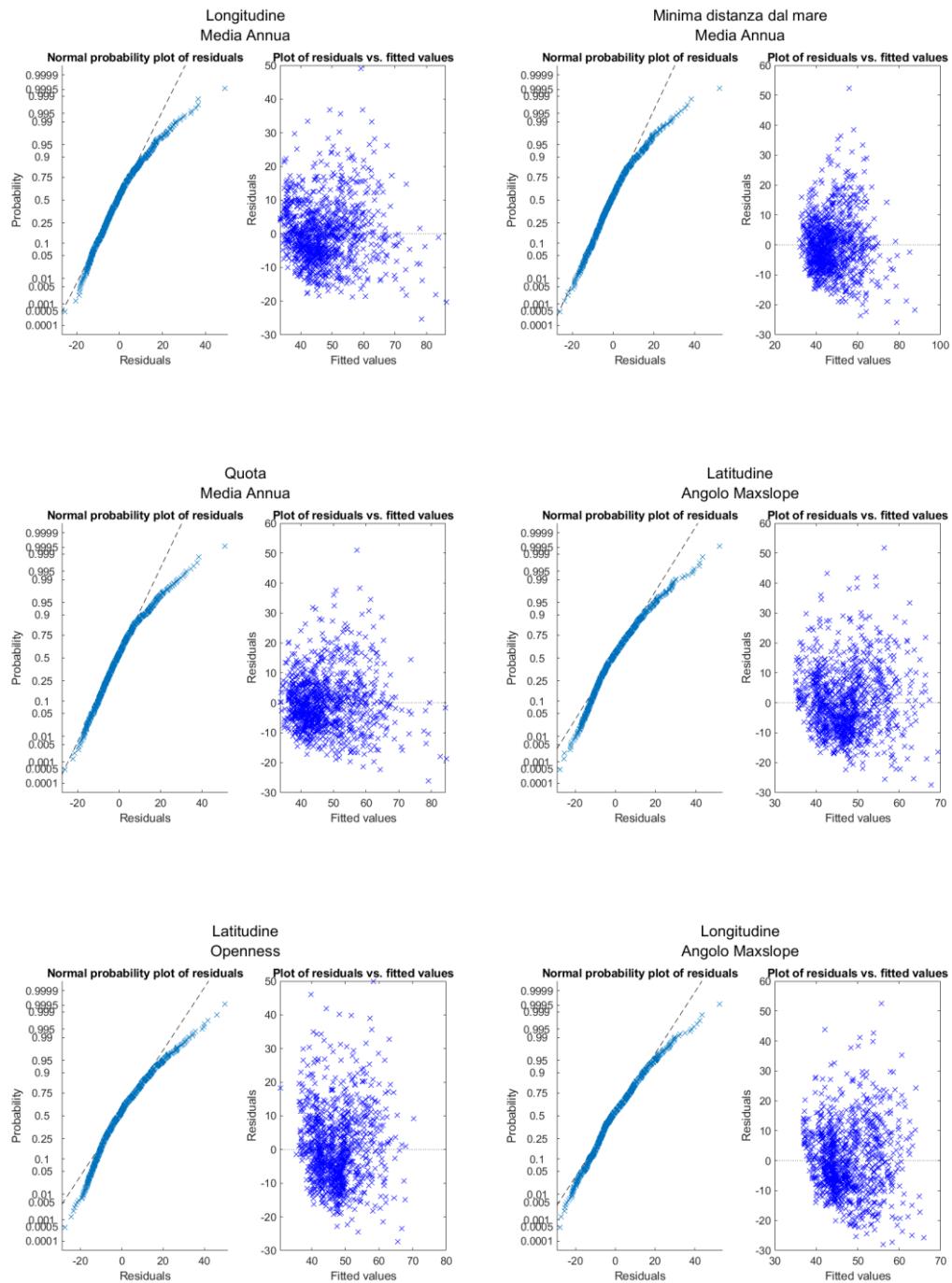


Tabella 62. Regressione 3h con media degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Longitudine	Media annua	0.480	0.479	3.39E+01	-8.47E-06	2.09E-02	1.08	1.08
Min Dist. dal Mare	Media annua	0.478	0.477	2.71E+01	-3.24E-01	2.36E-02	1.06	1.06
Quota	Media annua	0.462	0.461	2.50E+01	-4.45E-03	2.39E-02	1.31	1.31
Latitudine	Angolo maxslope	0.258	0.257	-2.62E+01	1.48E-05	5.90E-01	1.00	1.00
Latitudine	Openness	0.244	0.243	1.15E+02	1.38E-05	-8.65E+01	1.00	1.00
Longitudine	Angolo maxslope	0.207	0.206	5.45E+01	-1.35E-05	4.71E-01	1.06	1.06
Longitudine	Openness	0.206	0.204	1.68E+02	-1.33E-05	-7.21E+01	1.06	1.06
Latitudine	Angolo picco	0.204	0.203	-2.53E+01	1.46E-05	6.56E-01	1.00	1.00
Latitudine	Quota	0.199	0.198	-3.13E+01	1.62E-05	1.47E-02	1.03	1.03
Quota	Openness	0.173	0.171	1.62E+02	8.06E-03	-7.70E+01	1.06	1.06

Figura 64. Diagrammi diagnostici per regressione 3h con media degli estremi, 2 variabili, area Costa



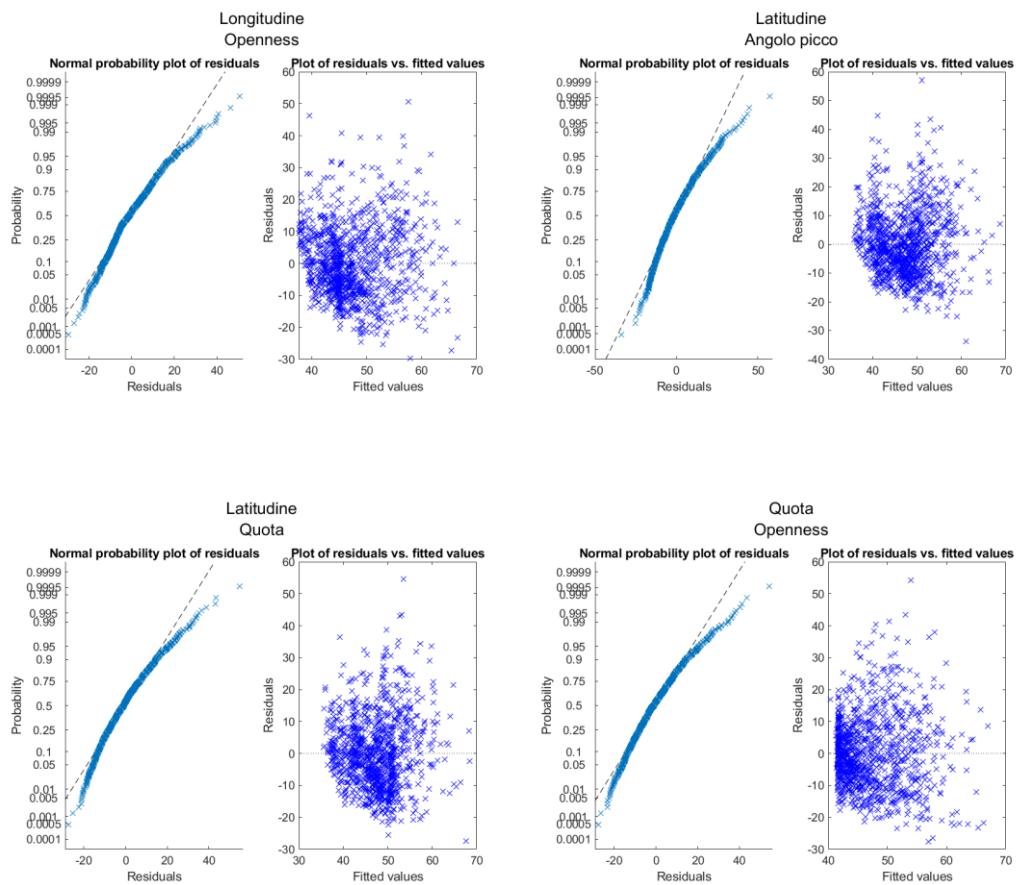
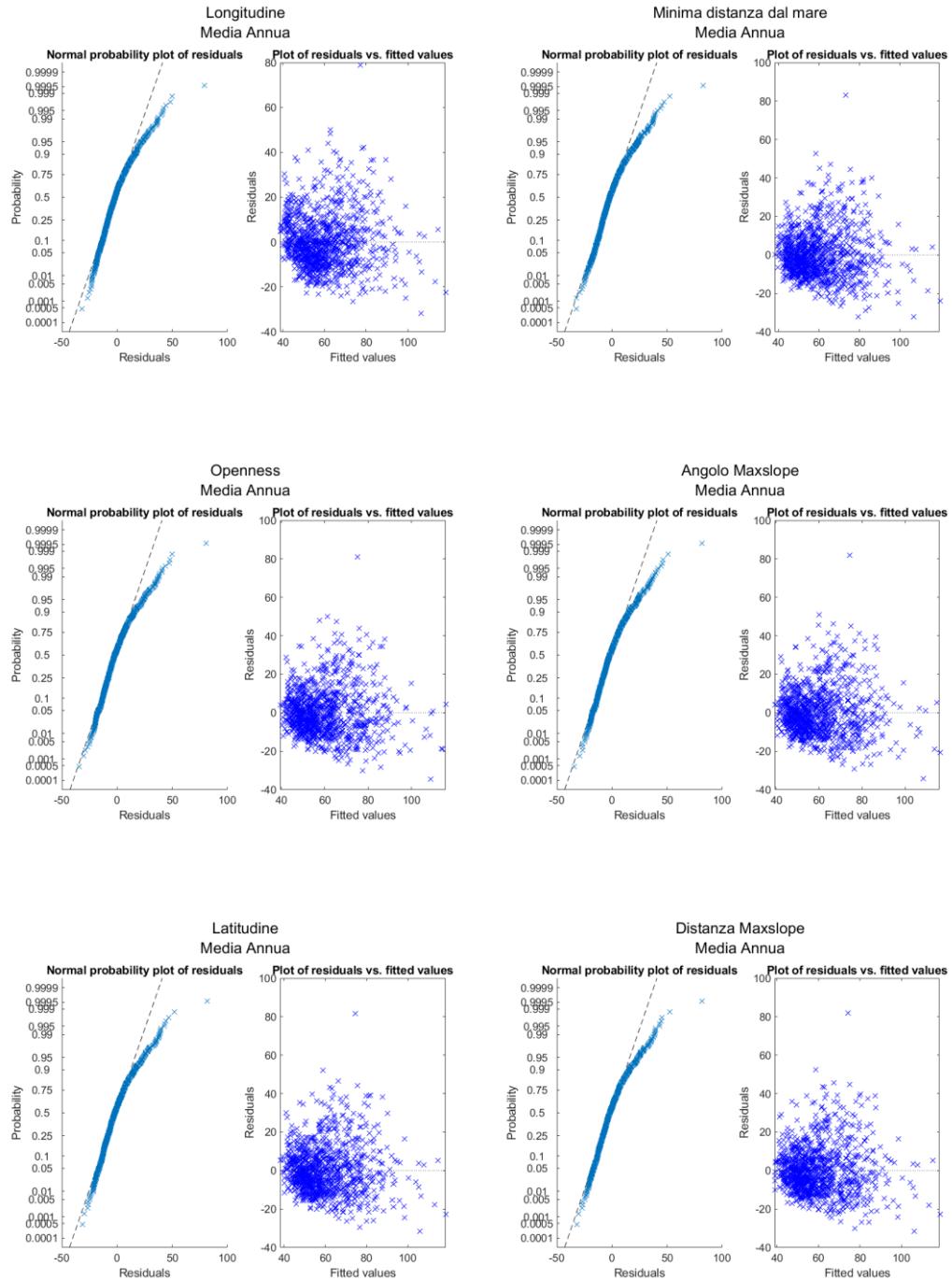


Tabella 63. Regressione 6h con media degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Longitudine	Media annua	0.533	0.533	3.85E+01	-1.18E-05	3.15E-02	1.08	1.08
Min Dist. dal Mare	Media annua	0.517	0.516	2.81E+01	-2.71E-01	3.46E-02	1.06	1.06
Openness	Media annua	0.516	0.515	7.48E+01	-3.01E+01	3.12E-02	1.39	1.39
Angolo maxslope	Media annua	0.514	0.513	2.73E+01	1.72E-01	3.15E-02	1.40	1.40
Latitudine	Media annua	0.512	0.511	1.31E+01	3.12E-06	3.27E-02	1.13	1.13
Distanza maxslope	Media annua	0.512	0.511	2.81E+01	-1.90E-04	3.29E-02	1.08	1.08
Latitudine	Angolo maxslope	0.292	0.291	-3.84E+01	1.94E-05	9.65E-01	1.00	1.00
Latitudine	Openness	0.280	0.279	1.96E+02	1.78E-05	-1.44E+02	1.00	1.00
Quota	Openness	0.268	0.267	2.42E+02	1.78E-02	-1.23E+02	1.06	1.06
Latitudine	Quota	0.258	0.257	-5.06E+01	2.23E-05	2.77E-02	1.03	1.03

Figura 65. Diagrammi diagnostici per regressione 6h con media degli estremi, 2 variabili, area Costa



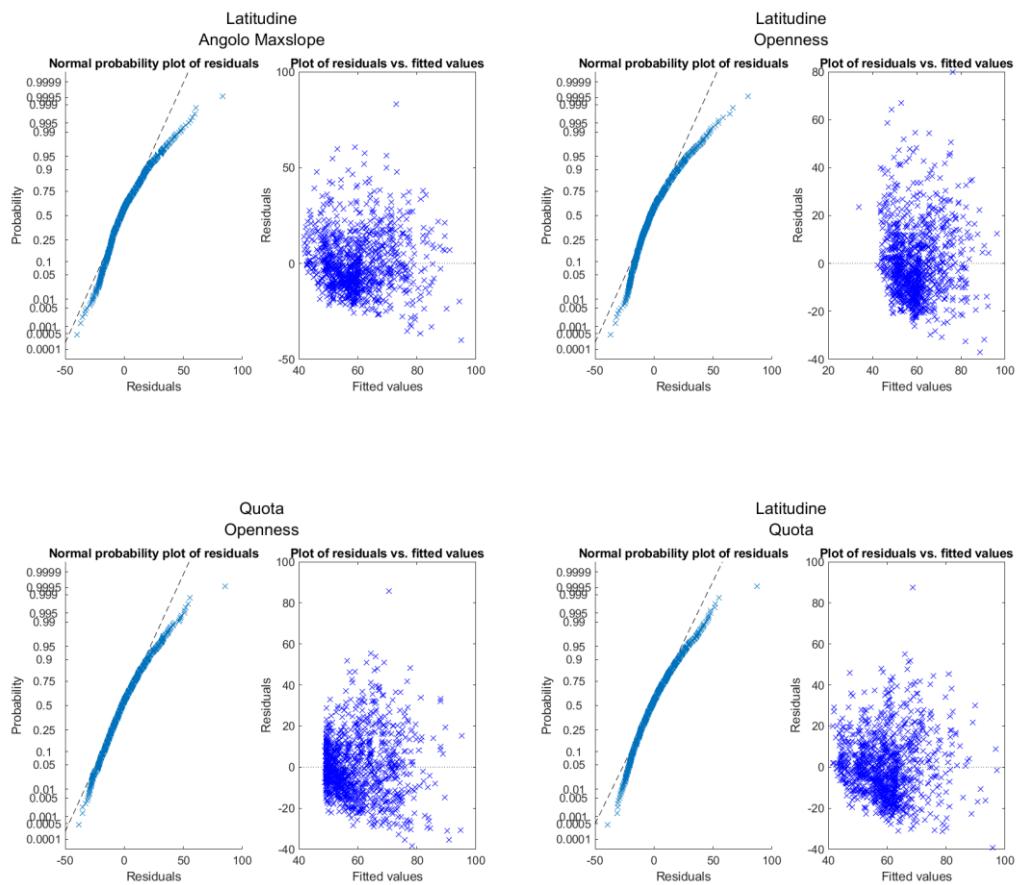
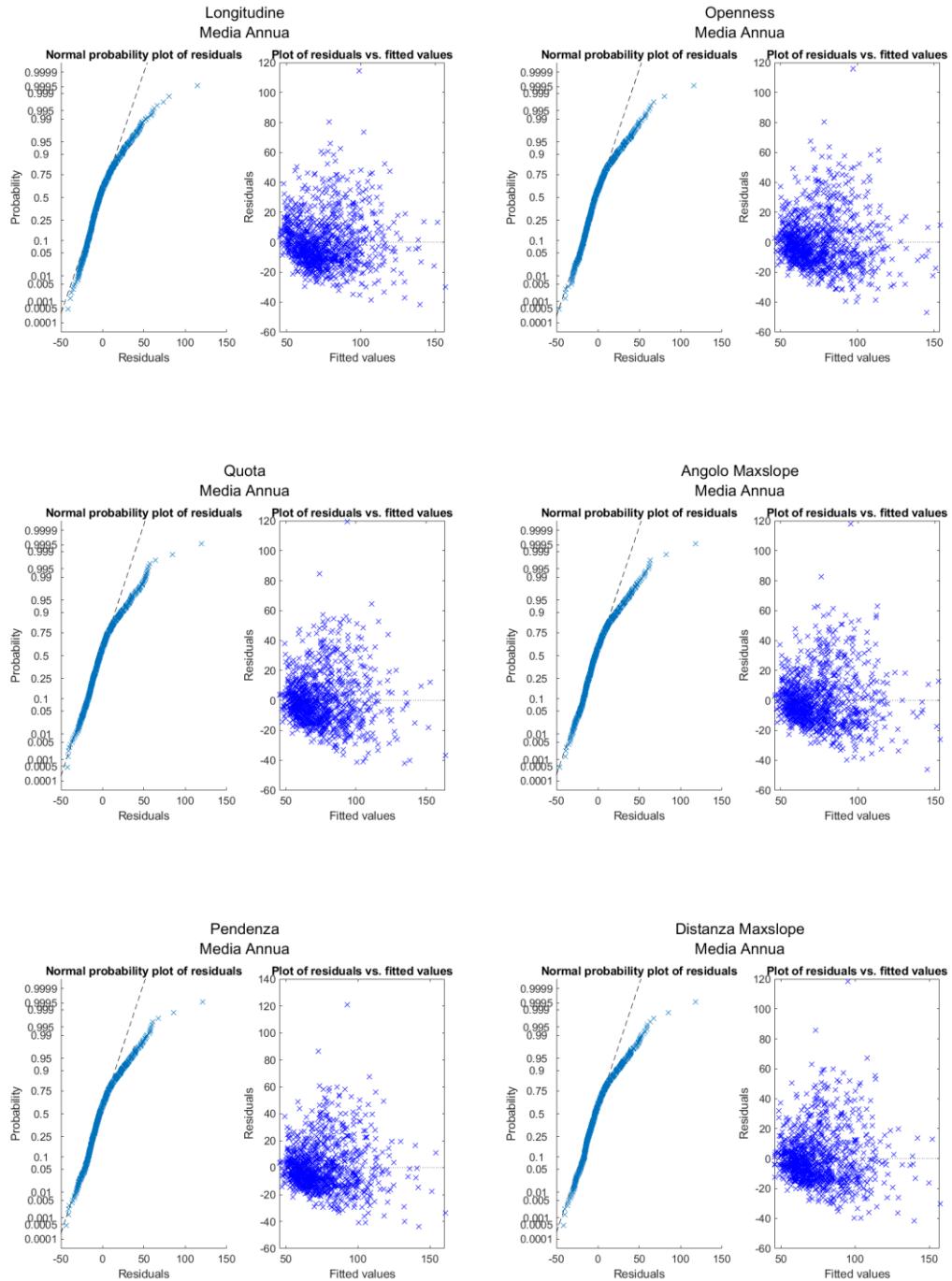


Tabella 64. Regressione 12h con media degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Longitudine	Media annua	0.536	0.535	4.34E+01	-1.52E-05	4.45E-02	1.08	1.08
Openness	Media annua	0.527	0.526	1.21E+02	-5.79E+01	4.27E-02	1.39	1.39
Quota	Media annua	0.526	0.525	2.92E+01	1.06E-02	4.34E-02	1.31	1.31
Angolo maxslope	Media annua	0.524	0.523	2.93E+01	3.25E-01	4.33E-02	1.40	1.40
Pendenza	Media annua	0.519	0.518	2.82E+01	2.12E-01	4.54E-02	1.18	1.18
Distanza maxslope	Media annua	0.517	0.516	3.00E+01	-2.47E-04	4.63E-02	1.08	1.08
Quota	Openness	0.336	0.335	3.35E+02	3.16E-02	-1.76E+02	1.06	1.06
Quota	Angolo maxslope	0.309	0.308	5.78E+01	2.96E-02	1.06E+00	1.11	1.11
Latitudine	Quota	0.307	0.306	-7.46E+01	2.97E-05	4.54E-02	1.03	1.03
Latitudine	Angolo maxslope	0.296	0.295	-5.19E+01	2.47E-05	1.41E+00	1.00	1.00

Figura 66. Diagrammi diagnostici per regressione 12h con media degli estremi, 2 variabili, area Costa



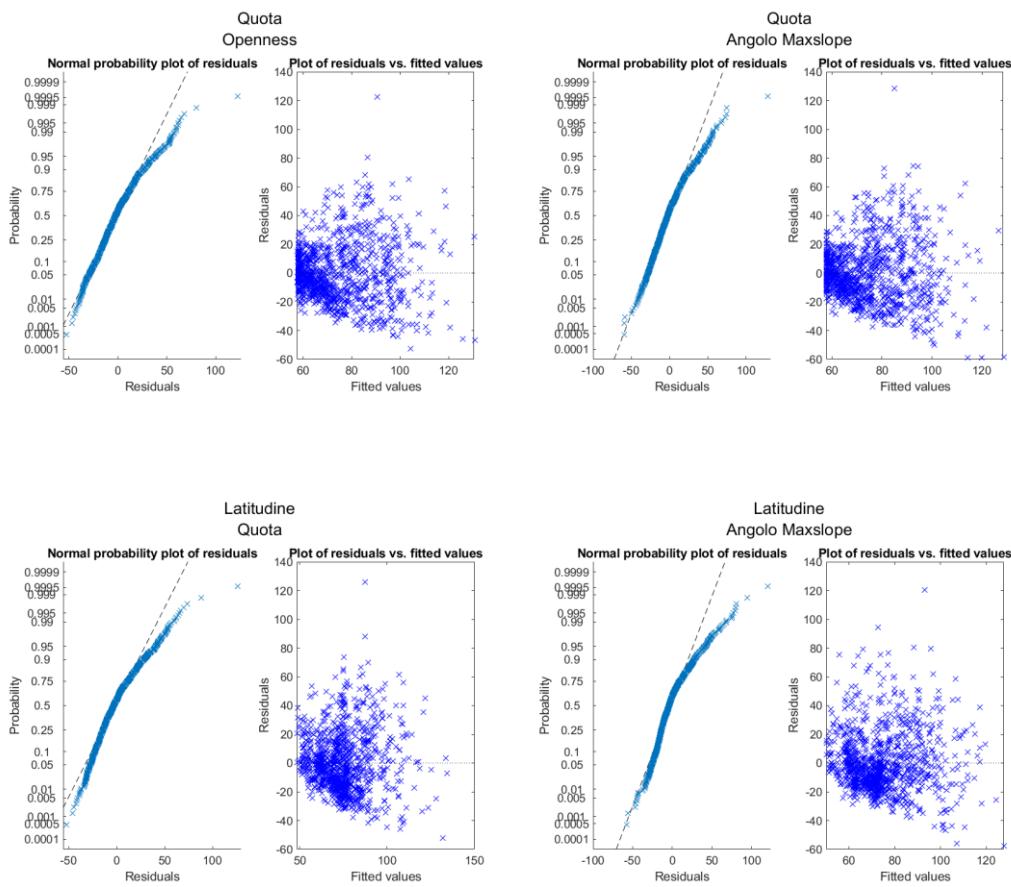
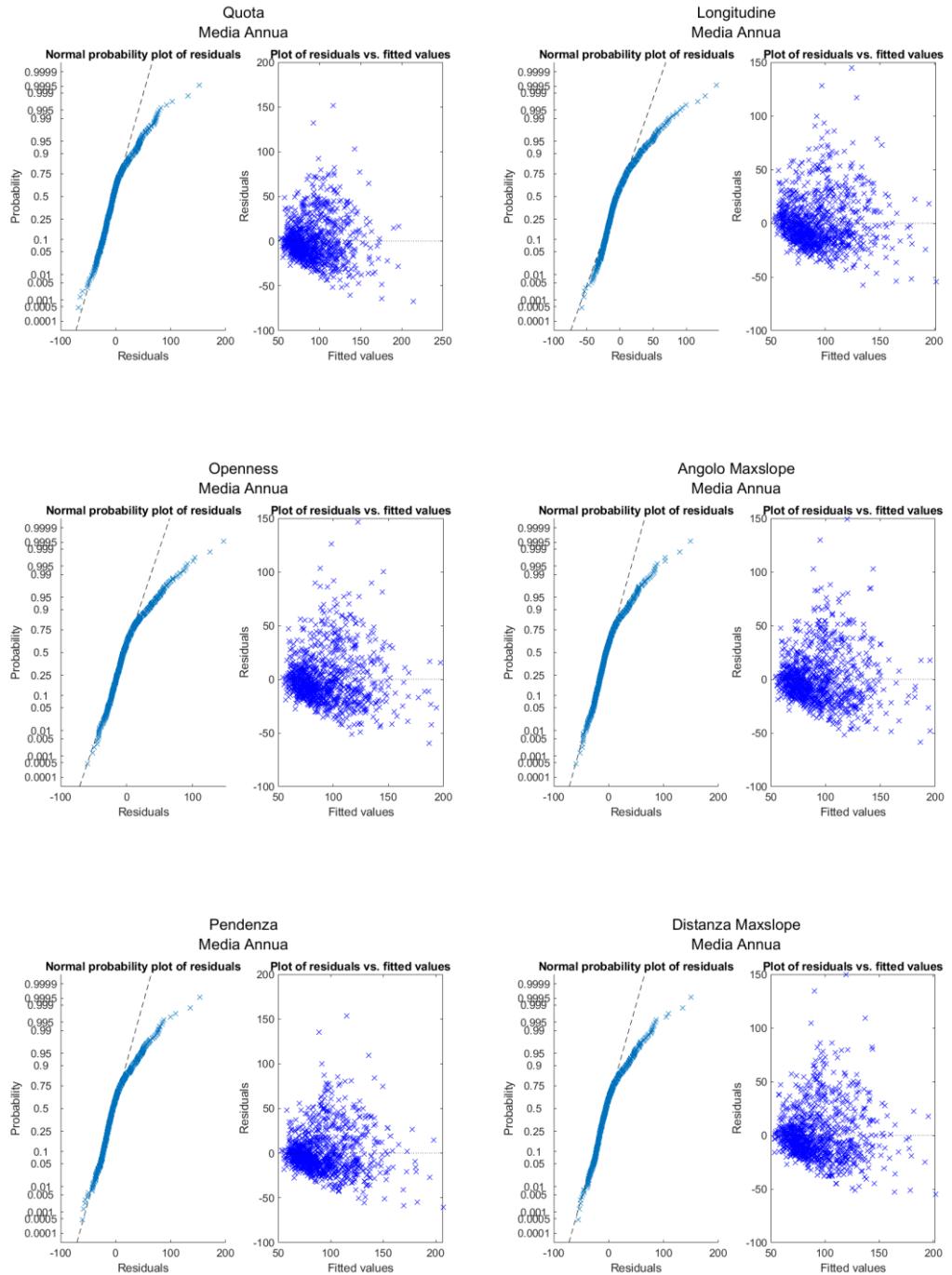


Tabella 65. Regressione 24h con media degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Quota	Media annua	0.524	0.523	3.24E+01	2.15E-02	5.51E-02	1.31	1.31
Longitudine	Media annua	0.518	0.517	4.96E+01	-1.91E-05	5.93E-02	1.08	1.08
Openness	Media annua	0.516	0.515	1.75E+02	-9.05E+01	5.57E-02	1.39	1.39
Angolo maxslope	Media annua	0.512	0.511	3.20E+01	5.06E-01	5.66E-02	1.40	1.40
Pendenza	Media annua	0.506	0.505	3.04E+01	3.44E-01	5.98E-02	1.18	1.18
Distanza maxslope	Media annua	0.502	0.501	3.28E+01	-3.36E-04	6.15E-02	1.08	1.08
Angolo picco	Media annua	0.502	0.501	3.05E+01	2.69E-01	6.05E-02	1.31	1.31
Quota	Openness	0.372	0.371	4.41E+02	4.75E-02	-2.37E+02	1.06	1.06
Quota	Angolo maxslope	0.342	0.340	6.84E+01	4.51E-02	1.40E+00	1.11	1.11
Latitudine	Quota	0.334	0.333	-1.02E+02	3.84E-05	6.58E-02	1.03	1.03

Figura 67. Diagrammi diagnostici per regressione 24h con media degli estremi, 2 variabili, area Costa



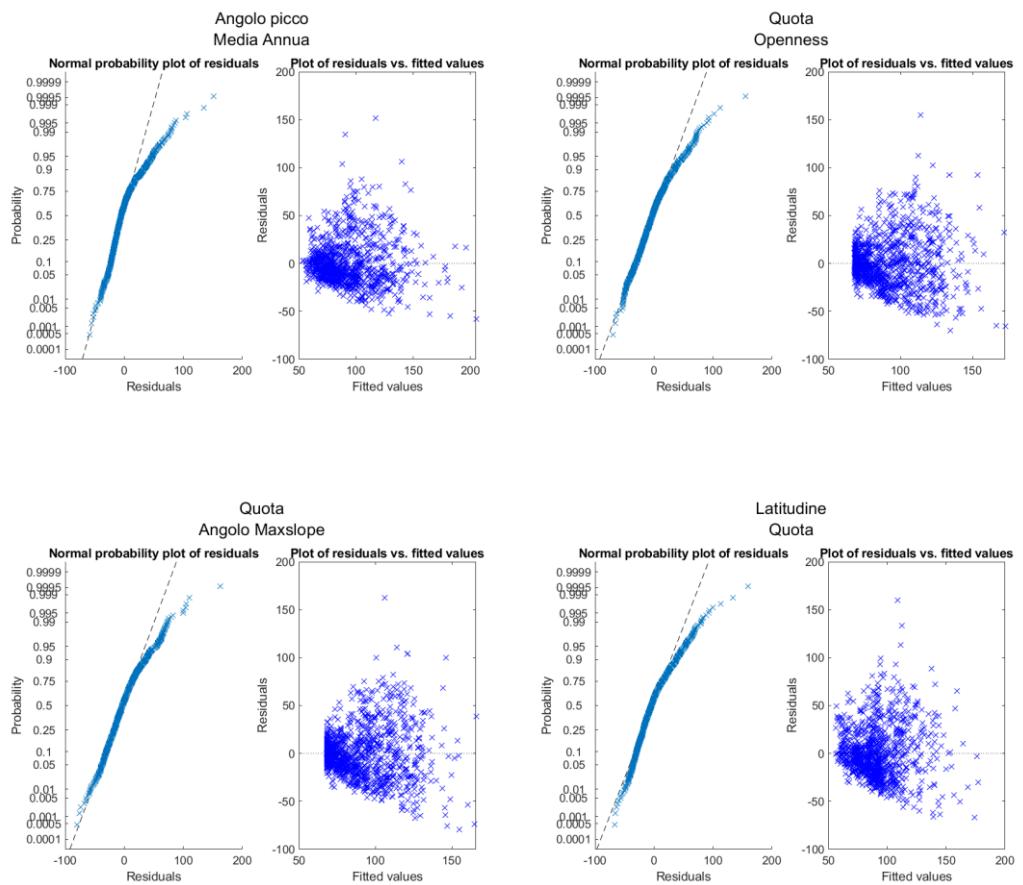
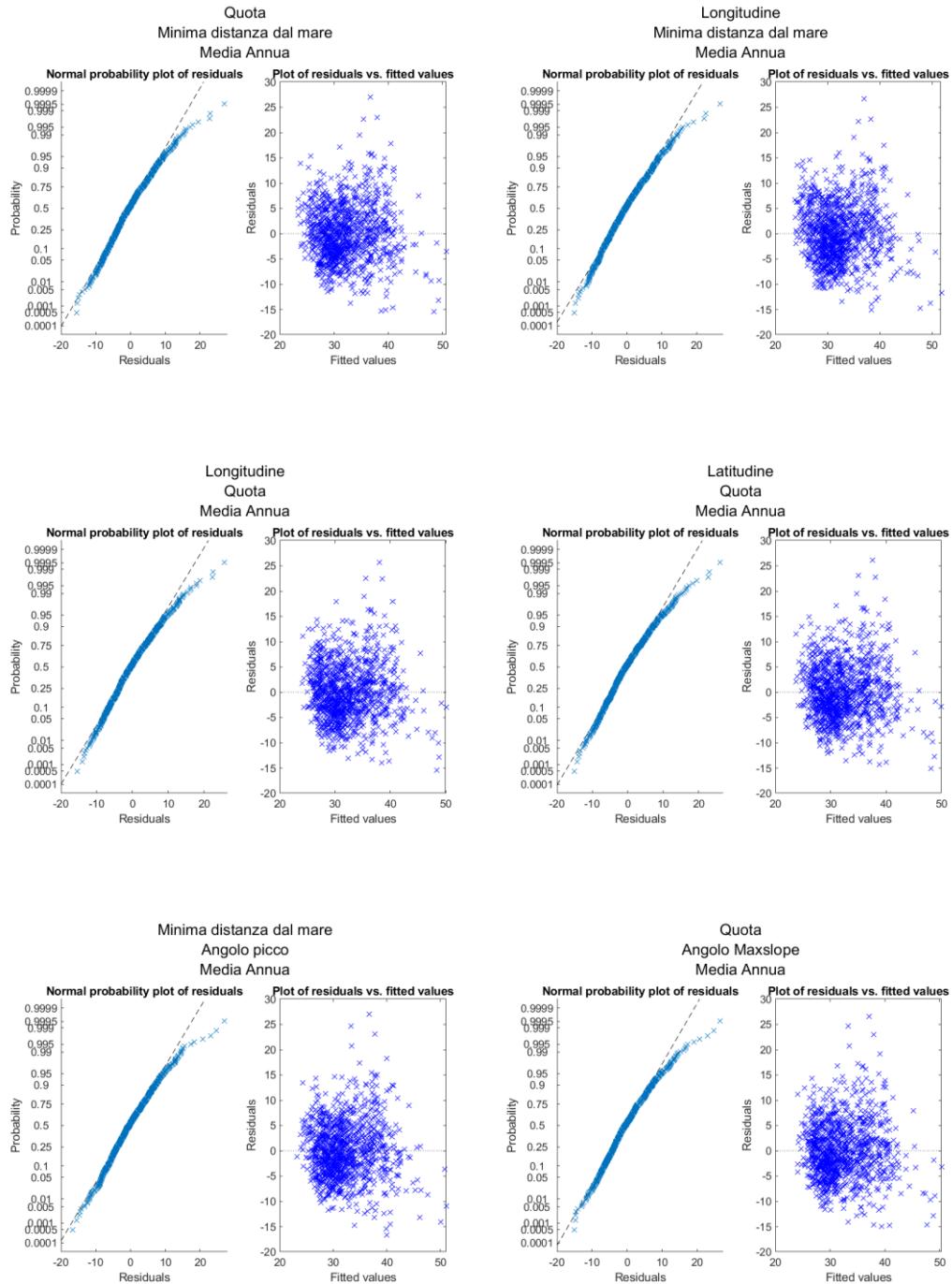


Tabella 66. Regressione 1h con media degli estremi, 3 variabili, area Costa.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Quota	Min Dist. dal Mare	Media annua	0.398	0.396	2.19E+01	-4.85E-03	-1.66E-01	1.33E-02	1.55	1.26	1.31
Latitudine	Min Dist. dal Mare	Media annua	0.392	0.390	7.66E+00	3.43E-06	-2.30E-01	1.09E-02	1.14	1.07	1.21
Longitudine	Quota	Media annua	0.389	0.387	2.35E+01	-2.56E-06	-6.16E-03	1.26E-02	1.09	1.33	1.43
Latitudine	Quota	Media annua	0.386	0.384	1.30E+01	1.82E-06	-5.59E-03	1.24E-02	1.36	1.58	1.74
Min Dist. dal Mare	Angolo picco	Media annua	0.386	0.384	2.27E+01	-2.48E-01	-1.34E-01	1.29E-02	1.07	1.31	1.38
Quota	Angolo maxslope	Media annua	0.385	0.383	2.07E+01	-6.32E-03	-5.53E-02	1.38E-02	1.32	1.41	1.67
Longitudine	Min Dist. dal Mare	Media annua	0.385	0.383	2.56E+01	-2.96E-06	-2.37E-01	1.13E-02	1.08	1.07	1.15
Min Dist. dal Mare	Angolo maxslope	Media annua	0.381	0.379	2.25E+01	-2.46E-01	-7.69E-02	1.28E-02	1.07	1.40	1.48
Pendenza	Min Dist. dal Mare	Media annua	0.379	0.377	2.27E+01	-6.00E-02	-2.41E-01	1.24E-02	1.18	1.06	1.24
Latitudine	Angolo picco	Media annua	0.360	0.358	6.47E+00	3.43E-06	-7.68E-02	1.06E-02	1.22	1.42	1.59

Figura 68. Diagrammi diagnostici per regressione 1h con media degli estremi, 3 variabili, area Costa



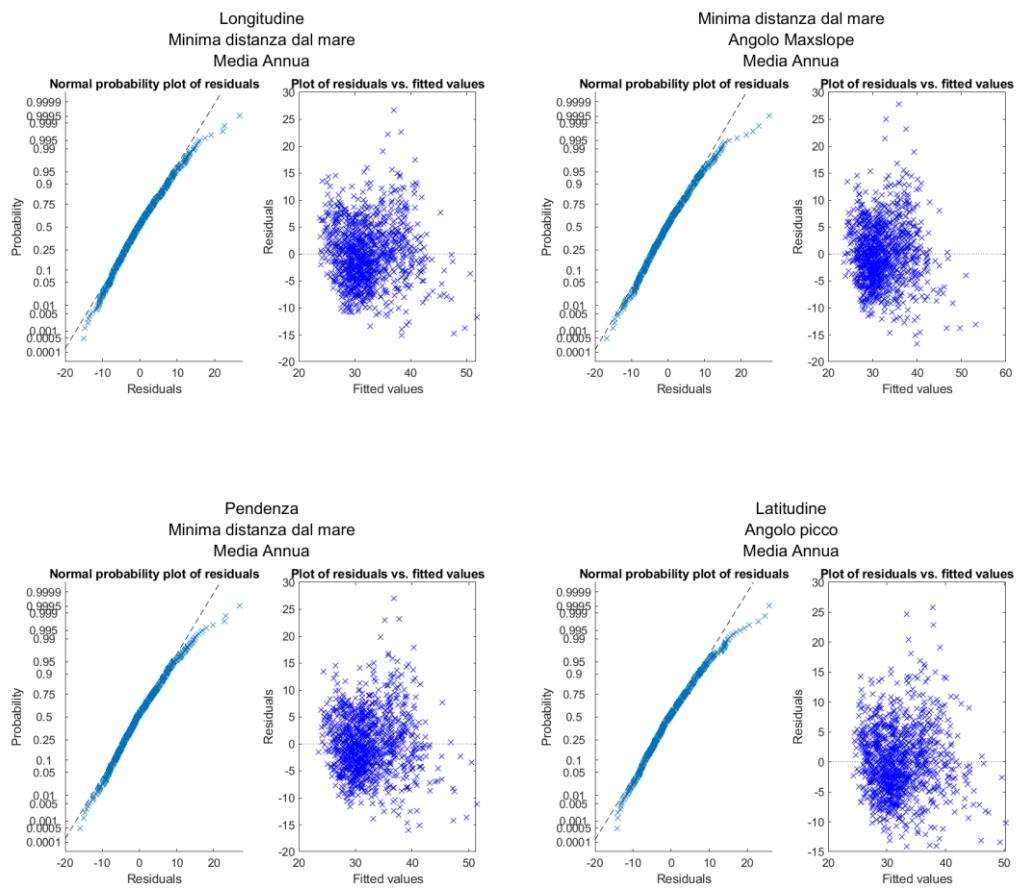
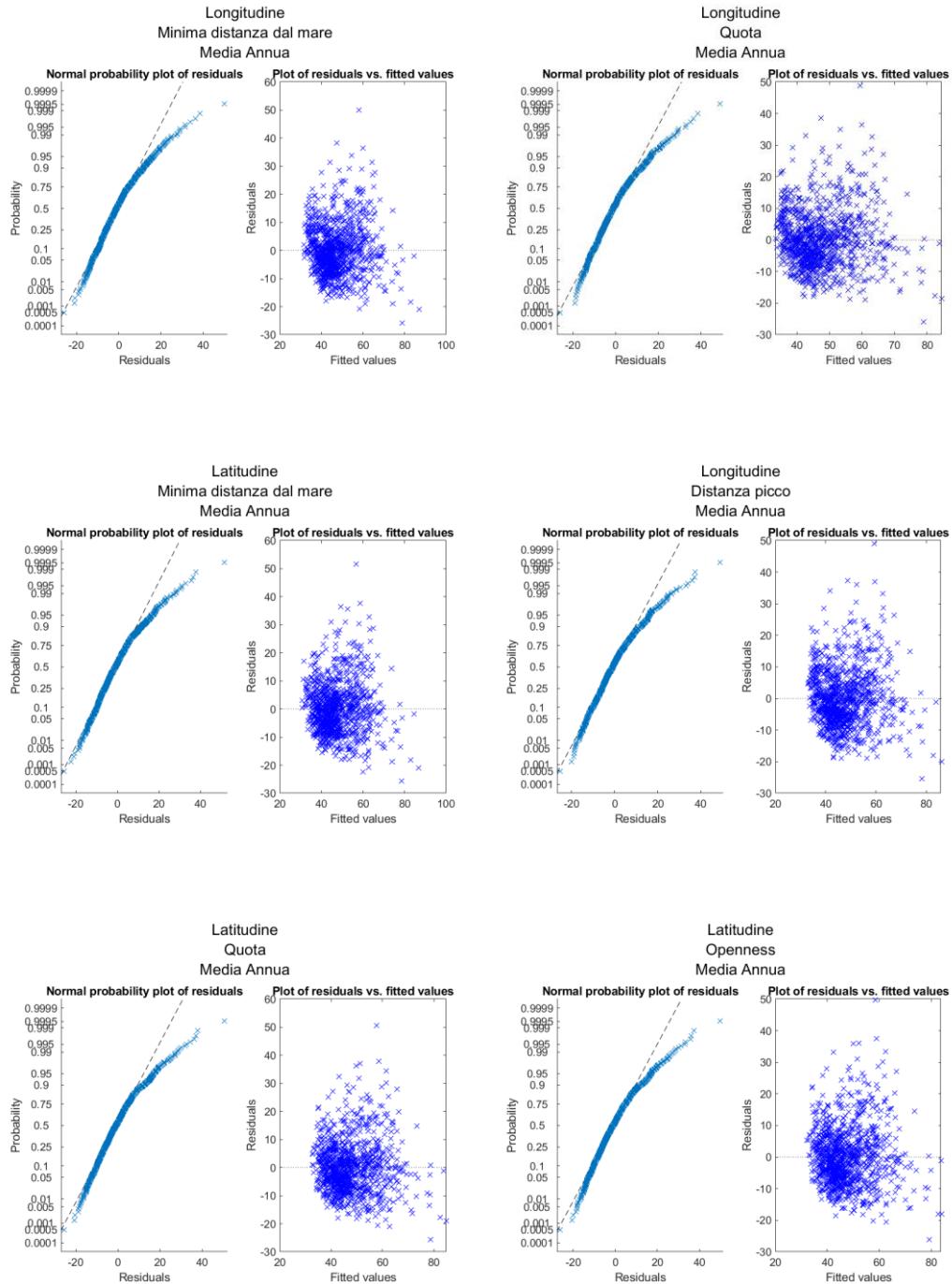


Tabella 67. Regressione 3h con media degli estremi, 3 variabili, area Costa.

	Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Longitudine	Min Dist. dal Mare	Media annua	0.500	0.499	3.50E+01	-8.07E-06	-3.07E-01	2.21E-02	1.08	1.07	1.15
Longitudine	Quota	Media annua	0.484	0.483	3.32E+01	-8.06E-06	-3.57E-03	2.22E-02	1.09	1.33	1.43
Latitudine	Min Dist. dal Mare	Media annua	0.484	0.483	1.07E+01	3.74E-06	-3.09E-01	2.26E-02	1.14	1.07	1.21
Longitudine	Distanza picco	Media annua	0.482	0.480	3.34E+01	-8.58E-06	1.29E-04	2.10E-02	1.08	1.01	1.08
Latitudine	Quota	Media annua	0.466	0.465	1.10E+01	3.24E-06	-2.93E-03	2.25E-02	1.36	1.58	1.74
Latitudine	Openness	Media annua	0.466	0.464	2.59E+01	4.83E-06	-1.35E+01	2.01E-02	1.19	1.46	1.65
Distanza picco	Distanza maxslope	Media annua	0.459	0.458	2.58E+01	1.57E-04	-1.59E-04	2.20E-02	1.12	1.20	1.08
Latitudine	Quota	Angolo maxslope	0.298	0.297	-3.46E+01	1.63E-05	9.88E-03	4.93E-01	1.03	1.14	1.11
Latitudine	Quota	Openness	0.297	0.295	8.42E+01	1.56E-05	1.11E-02	-7.35E+01	1.03	1.09	1.06
Latitudine	Pendenza	Angolo maxslope	0.266	0.264	-2.60E+01	1.46E-05	1.58E-01	5.23E-01	1.01	1.26	1.27

Figura 69. Diagrammi diagnostici per regressione 3h con media degli estremi, 3 variabili, area Costa



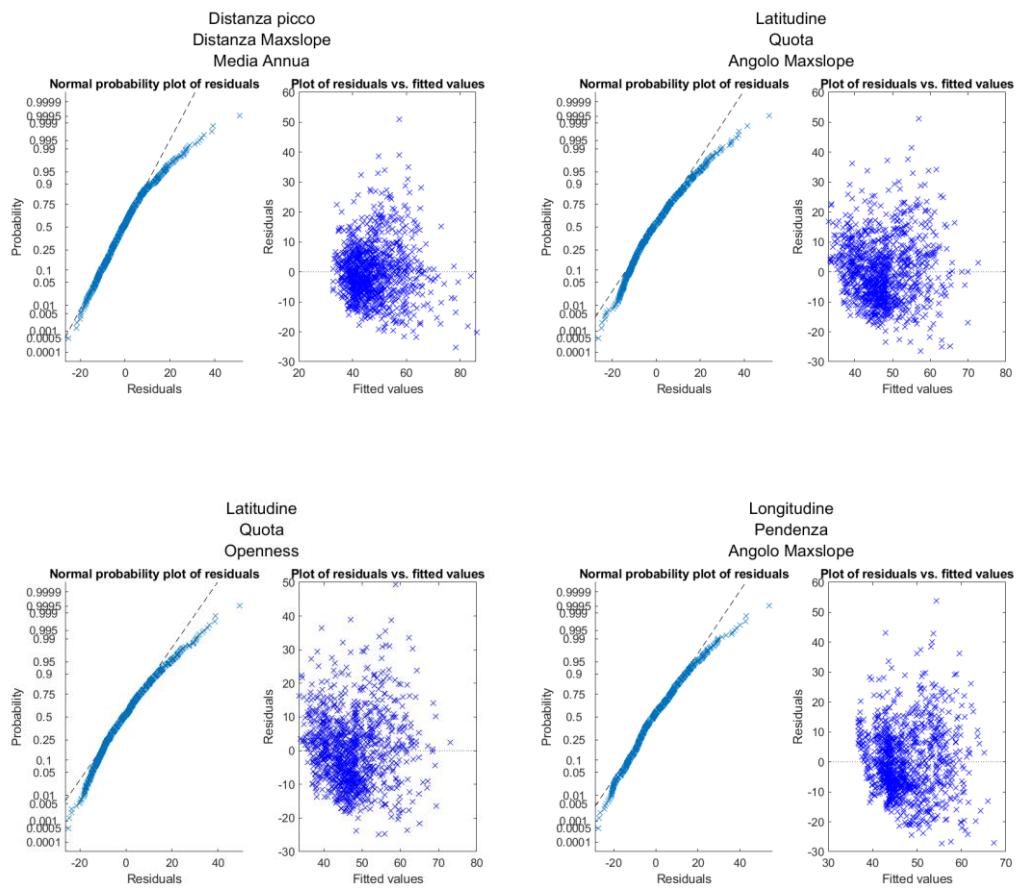
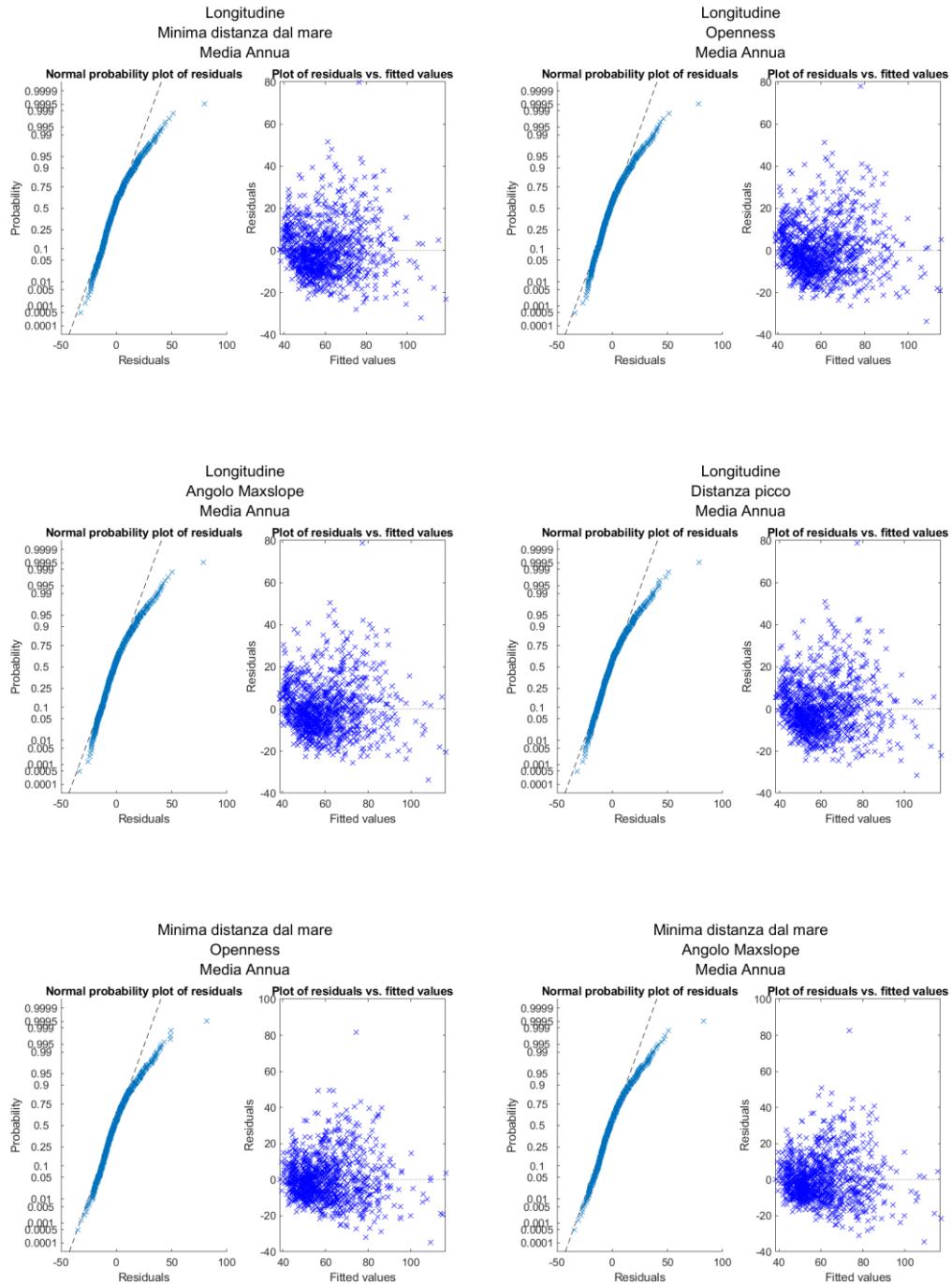


Tabella 68. Regressione 6h con media degli estremi, 3 variabili, area Costa.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3	
Longitudine	Min Dist. dal Mare	Media annua	0.540	0.539	3.94E+01	-1.15E-05	-2.48E-01	3.25E-02	1.08	1.07	1.15	
Longitudine	Openness	Media annua	0.537	0.536	7.50E+01	-1.12E-05	-	2.32E+01	2.98E-02	1.10	1.41	1.43
Longitudine	Angolo maxslope	Media annua	0.536	0.535	3.85E+01	-1.14E-05	1.32E-01	3.00E-02	1.09	1.42	1.45	
Longitudine	Distanza picco	Media annua	0.536	0.534	3.78E+01	-1.20E-05	1.82E-04	3.16E-02	1.08	1.01	1.08	
Min Dist. dal Mare	Openness	Media annua	0.524	0.523	7.76E+01	-2.77E-01	-	3.10E+01	3.22E-02	1.06	1.39	1.44
Min Dist. dal Mare	Angolo maxslope	Media annua	0.522	0.520	2.86E+01	-2.65E-01	1.65E-01	3.26E-02	1.07	1.40	1.48	
Quota	Min Dist. dal Mare	Media annua	0.521	0.519	2.89E+01	4.59E-03	-3.44E-01	3.33E-02	1.55	1.26	1.31	
Latitudine	Openness	Media annua	0.520	0.519	6.46E+01	4.52E-06	-	3.60E+01	2.96E-02	1.19	1.46	1.65
Min Dist. dal Mare	Distanza maxslope	Media annua	0.520	0.519	2.95E+01	-2.76E-01	-2.02E-04	3.39E-02	1.07	1.08	1.14	
Distanza picco	Openness	Media annua	0.518	0.516	7.57E+01	1.74E-04	-	3.12E+01	3.13E-02	1.01	1.39	1.39

Figura 70. Diagrammi diagnostici per regressione 6h con media degli estremi, 3 variabili, area Costa



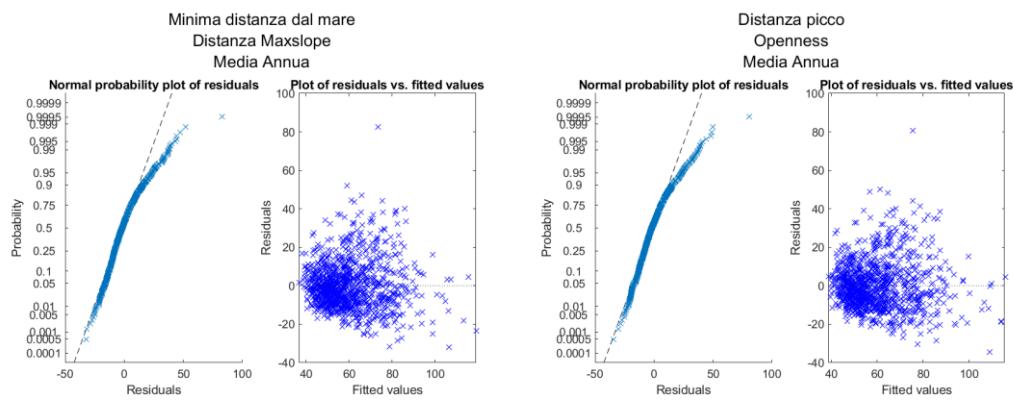
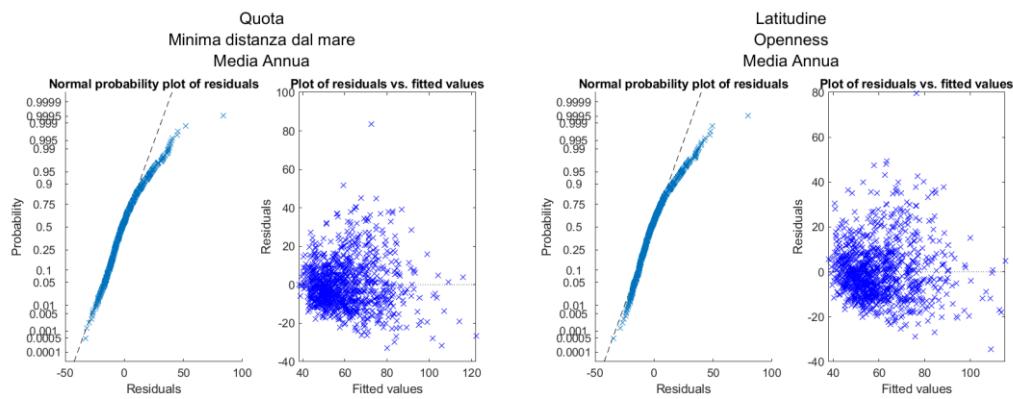
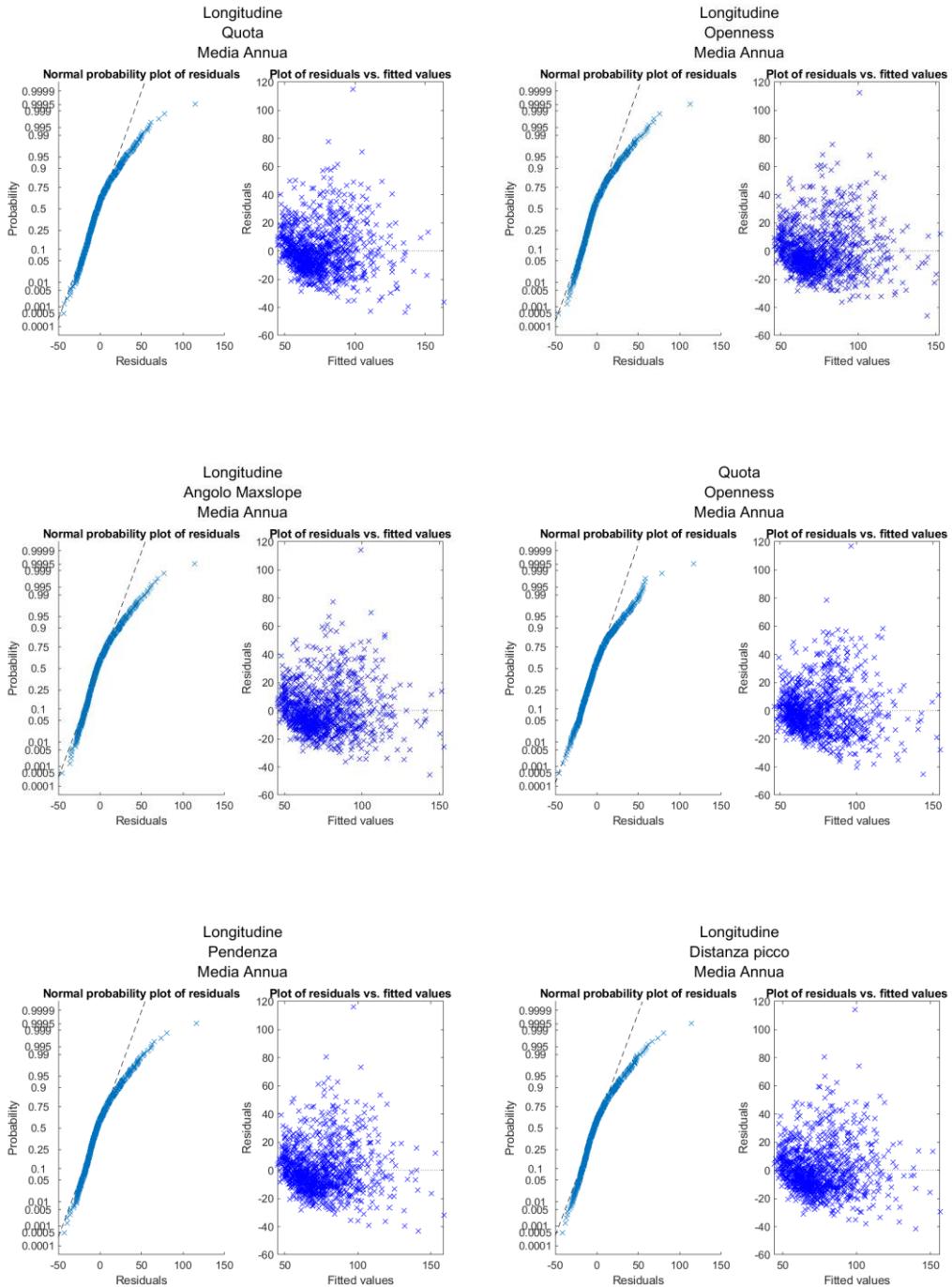


Tabella 69. Regressione 12h con media degli estremi, 3 variabili, area Costa.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	VIF 1	VIF 2	VIF 3	
Longitudine	Quota	Media annua	0.550	0.548	4.60E+01	-1.67E-05	1.24E-02	3.99E-02	1.09	1.33	1.43	
Longitudine	Openness	Media annua	0.544	0.543	1.21E+02	-1.40E-05	-	4.93E+01	4.09E-02	1.10	1.41	1.43
Longitudine	Angolo maxslope	Media annua	0.542	0.541	4.34E+01	-1.43E-05	2.75E-01	4.14E-02	1.09	1.42	1.45	
Quota	Openness	Media annua	0.538	0.537	1.24E+02	1.09E-02	-	5.95E+01	3.87E-02	1.31	1.39	1.72
Longitudine	Pendenza	Media annua	0.538	0.537	4.28E+01	-1.47E-05	1.56E-01	4.33E-02	1.10	1.20	1.24	
Longitudine	Distanza picco	Media annua	0.538	0.536	4.25E+01	-1.55E-05	2.30E-04	4.47E-02	1.08	1.01	1.08	
Quota	Angolo maxslope	Media annua	0.533	0.532	3.01E+01	9.92E-03	3.00E-01	4.01E-02	1.32	1.41	1.67	
Quota	Min Dist. dal Mare	Media annua	0.531	0.530	3.13E+01	1.39E-02	-3.49E-01	4.36E-02	1.55	1.26	1.31	
Distanza picco	Openness	Media annua	0.529	0.528	1.22E+02	2.32E-04	-	5.93E+01	4.28E-02	1.01	1.39	1.39
Quota	Distanza picco	Media annua	0.528	0.527	2.78E+01	1.15E-02	2.95E-04	4.34E-02	1.35	1.04	1.31	

Figura 71. Diagrammi diagnostici per regressione 12h con media degli estremi, 3 variabili, area Costa



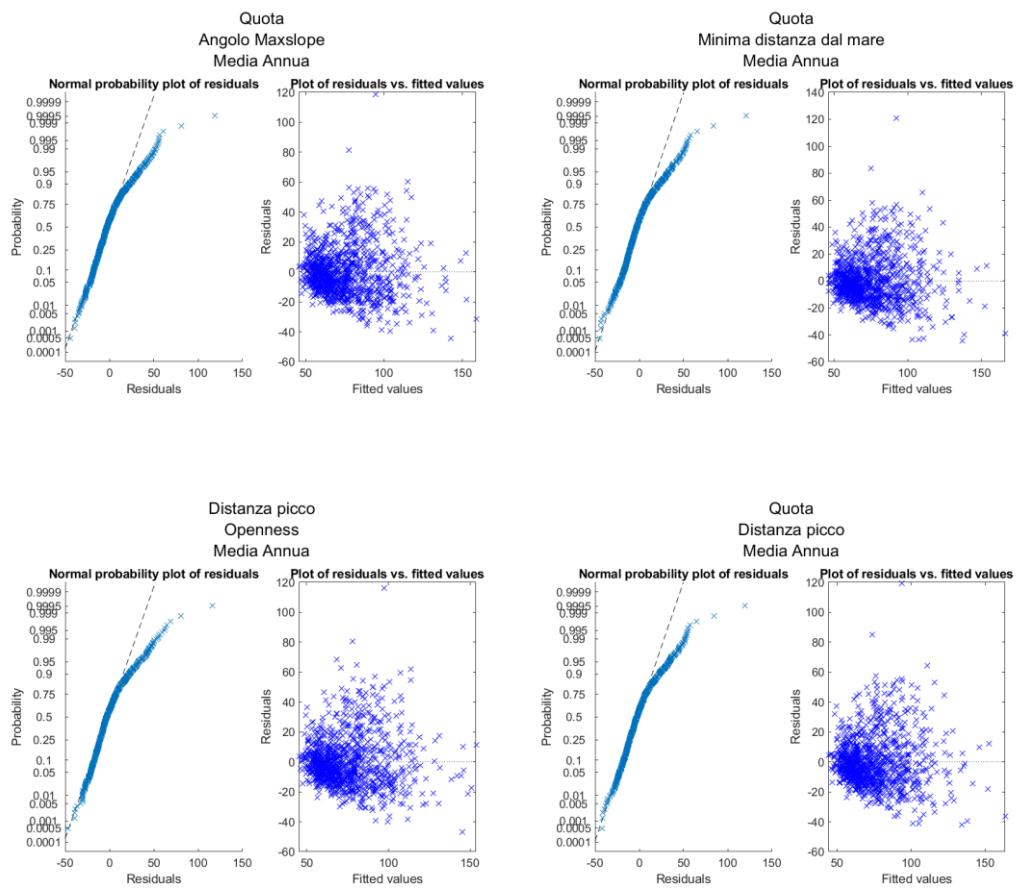
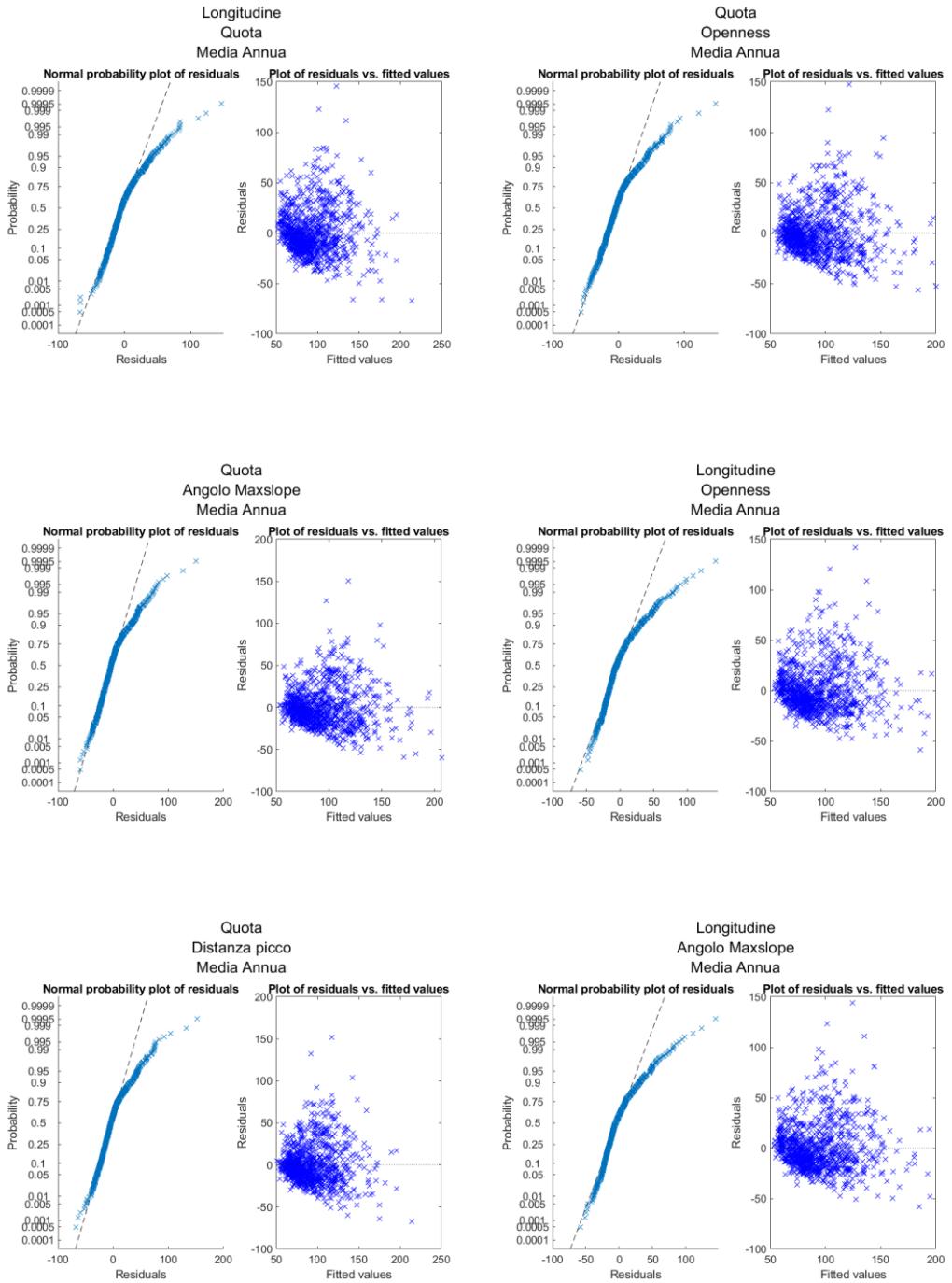
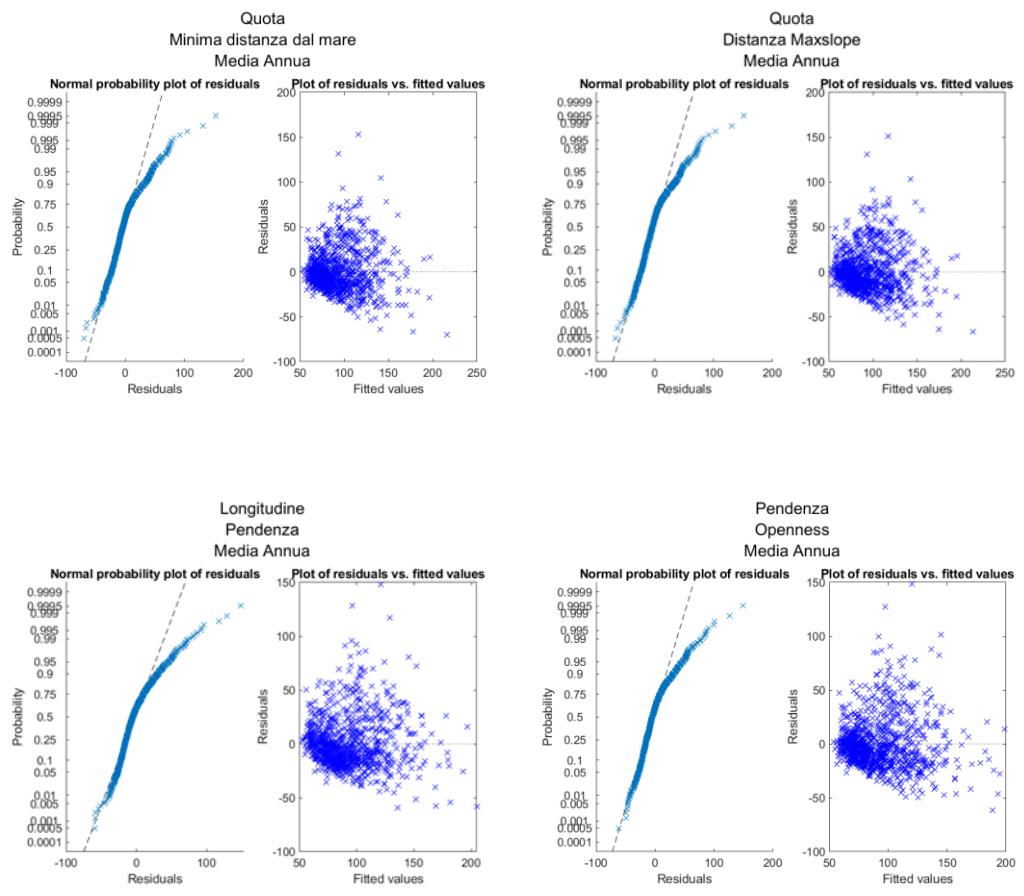


Tabella 70. Regressione 24h con media degli estremi, 3 variabili, area Costa.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3	
Longitudine	Quota	Media annua	0.546	0.545	5.45E+01	-2.19E-05	2.39E-02	5.04E-02	1.09	1.33	1.43	
Quota	Openness	Media annua	0.541	0.539	1.82E+02	2.20E-02	-	9.37E+01	4.77E-02	1.31	1.39	1.72
Quota	Angolo maxslope	Media annua	0.533	0.532	3.38E+01	2.05E-02	4.56E-01	5.00E-02	1.32	1.41	1.67	
Longitudine	Openness	Media annua	0.530	0.529	1.75E+02	-1.72E-05	-	8.00E+01	5.35E-02	1.10	1.41	1.43
Quota	Distanza picco	Media annua	0.527	0.526	3.04E+01	2.29E-02	4.37E-04	5.50E-02	1.35	1.04	1.31	
Longitudine	Angolo maxslope	Media annua	0.527	0.526	4.95E+01	-1.77E-05	4.45E-01	5.42E-02	1.09	1.42	1.45	
Quota	Min Dist. dal Mare	Media annua	0.526	0.525	3.43E+01	2.46E-02	-3.20E-01	5.52E-02	1.55	1.26	1.31	
Quota	Distanza maxslope	Media annua	0.525	0.524	3.47E+01	2.15E-02	-3.25E-04	5.40E-02	1.31	1.08	1.39	
Longitudine	Pendenza	Media annua	0.521	0.520	4.85E+01	-1.81E-05	2.74E-01	5.72E-02	1.10	1.20	1.24	
Pendenza	Openness	Media annua	0.518	0.517	1.62E+02	2.24E-01	-	8.26E+01	5.44E-02	1.25	1.46	1.47

Figura 72. Diagrammi diagnostici per regressione 24h con media degli estremi, 3 variabili, area Costa





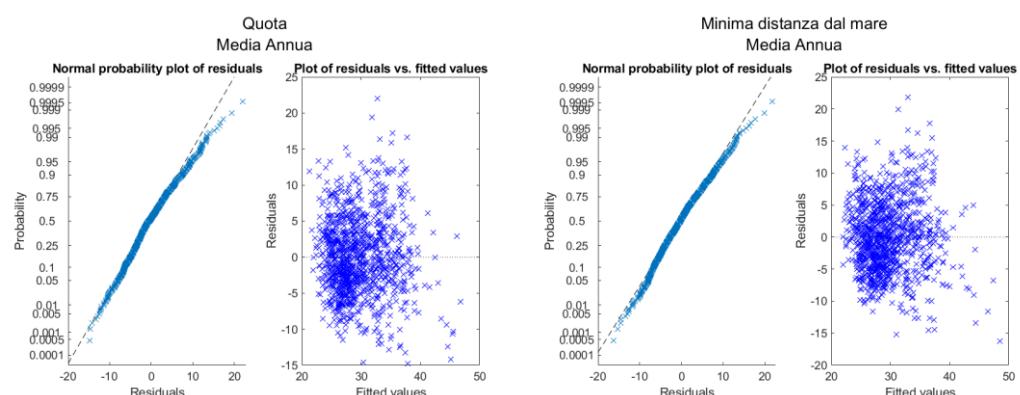
## **Regressioni con la mediana delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h**

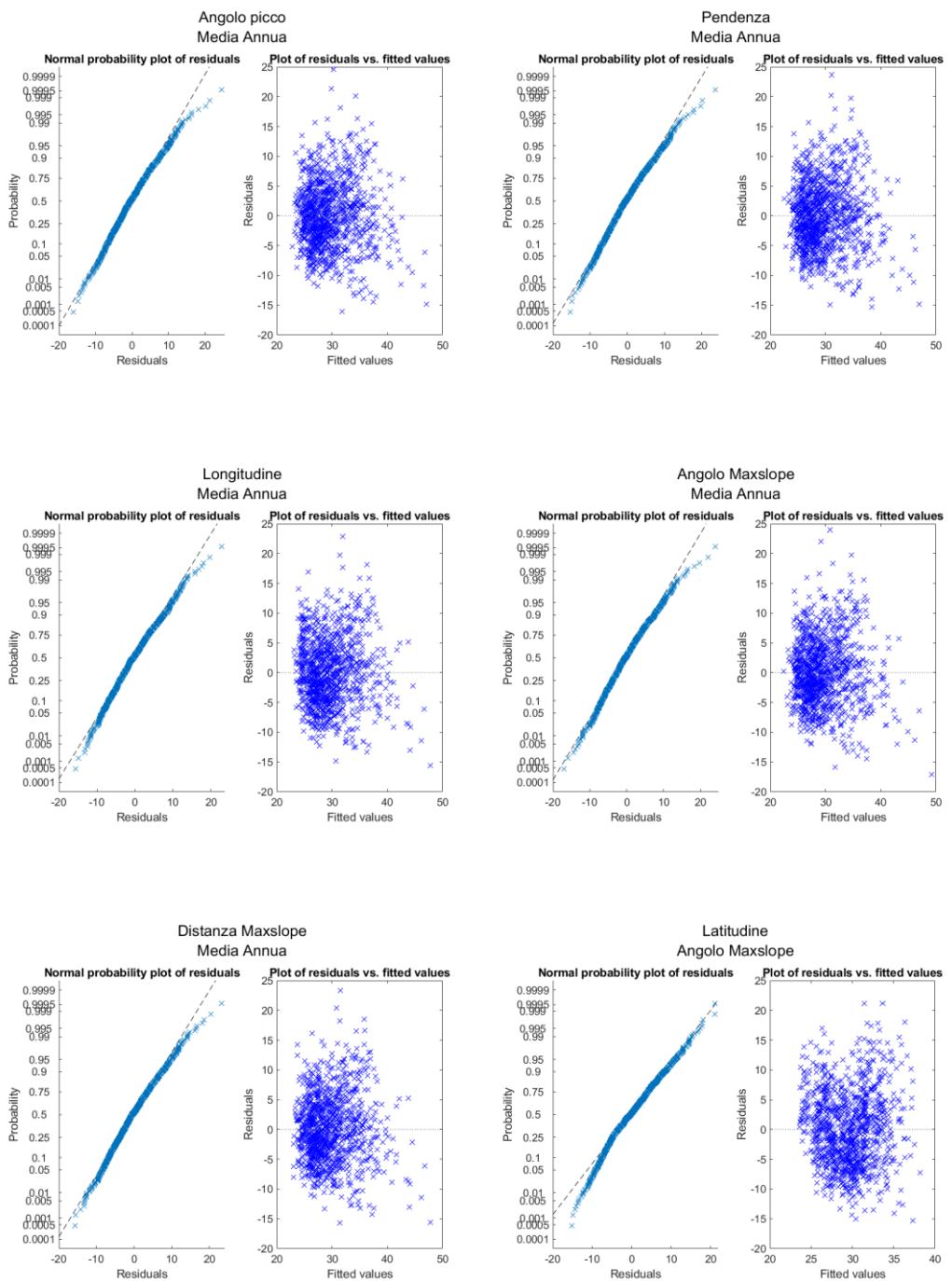
Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la mediana degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l'area Costiera. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 71. Regressione 1h con mediana degli estremi, 2 variabili, area Costa.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Quota	Media Annua	0.383	0.382	1.88E+01	-6.59E-03	1.27E-02
Minima distanza dal mare	Media Annua	0.361	0.360	2.04E+01	-2.05E-01	1.12E-02
Angolo picco	Media Annua	0.341	0.340	1.94E+01	-1.32E-01	1.15E-02
Pendenza	Media Annua	0.339	0.338	1.94E+01	-8.69E-02	1.11E-02
Longitudine	Media Annua	0.338	0.337	2.20E+01	-2.60E-06	9.96E-03
Angolo Maxslope	Media Annua	0.337	0.336	1.91E+01	-8.00E-02	1.14E-02
Distanza Maxslope	Media Annua	0.333	0.332	1.99E+01	-7.82E-05	1.02E-02
Latitudine	Angolo Maxslope	0.180	0.179	-1.11E+01	8.40E-06	2.09E-01
Latitudine	Openness	0.176	0.174	3.97E+01	8.05E-06	-3.11E+01
Latitudine	Angolo picco	0.158	0.156	-1.07E+01	8.34E-06	2.33E-01

*Figura 73. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 2 variabili, area Costa*





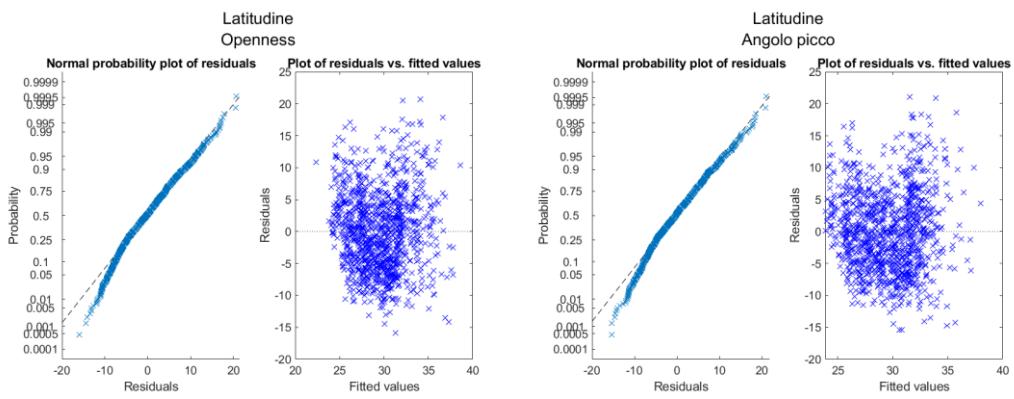
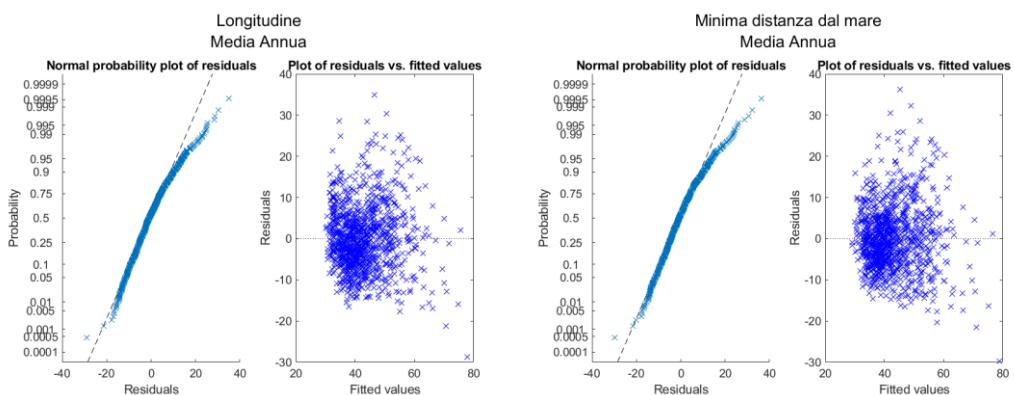
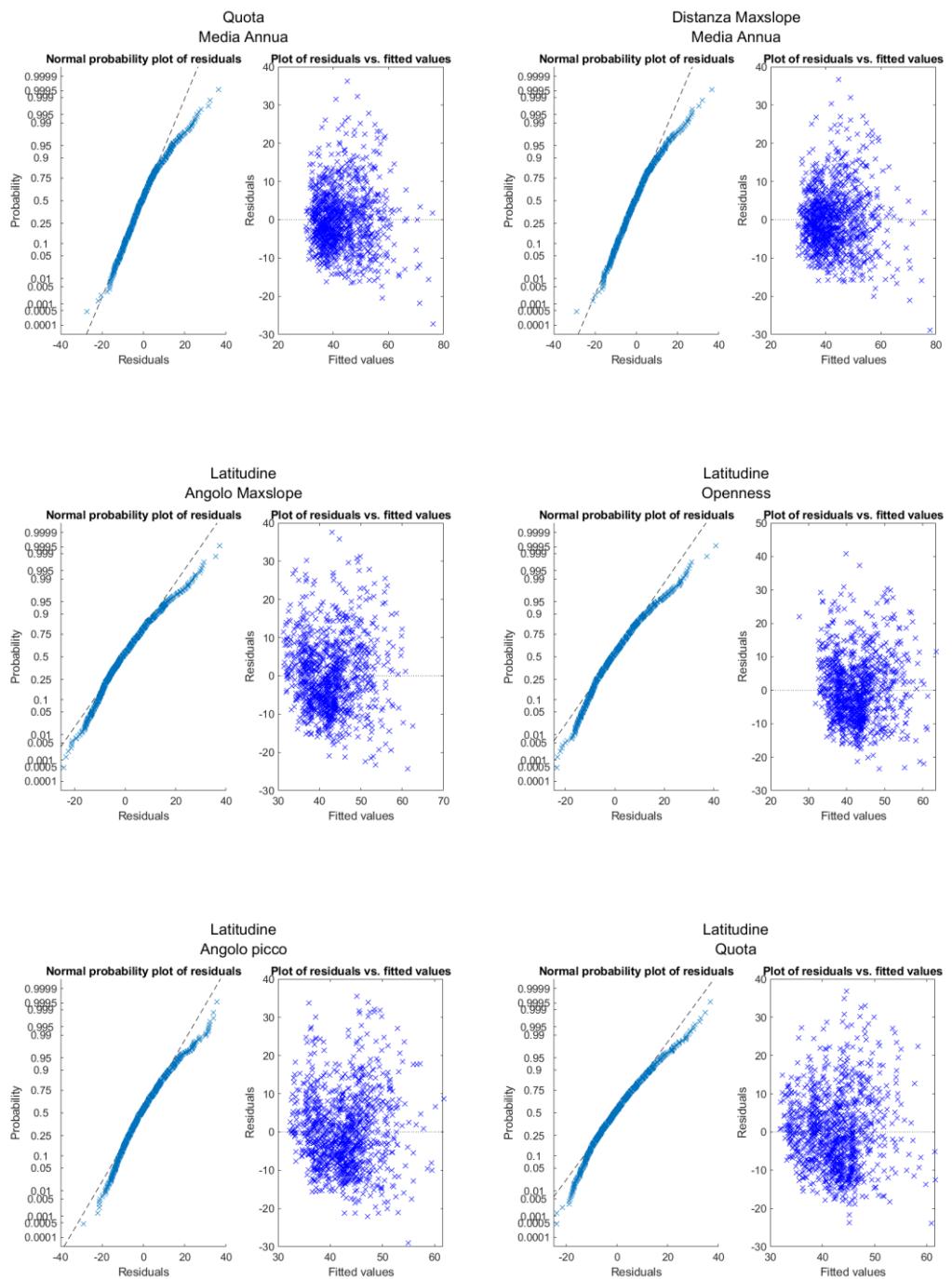


Tabella 72. Regressione 3h con mediana degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> adj	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Longitudine	Media Annua	0.496	0.495	2.89E+01	-6.07E-06	1.91E-02
Minima distanza dal mare	Media Annua	0.495	0.494	2.40E+01	-2.33E-01	2.11E-02
Quota	Media Annua	0.487	0.486	2.24E+01	-3.96E-03	2.16E-02
Distanza Maxslope	Media Annua	0.482	0.481	2.38E+01	-1.33E-04	1.97E-02
Latitudine	Angolo Maxslope	0.275	0.274	-2.37E+01	1.33E-05	5.39E-01
Latitudine	Openness	0.259	0.258	1.05E+02	1.24E-05	-7.87E+01
Latitudine	Angolo picco	0.213	0.211	-2.28E+01	1.32E-05	5.88E-01
Latitudine	Quota	0.210	0.209	-2.83E+01	1.46E-05	1.33E-02
Longitudine	Angolo Maxslope	0.205	0.204	4.76E+01	-1.06E-05	4.42E-01
Longitudine	Openness	0.203	0.202	1.54E+02	-1.04E-05	-6.75E+01

Figura 74. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 2 variabili, area Costa





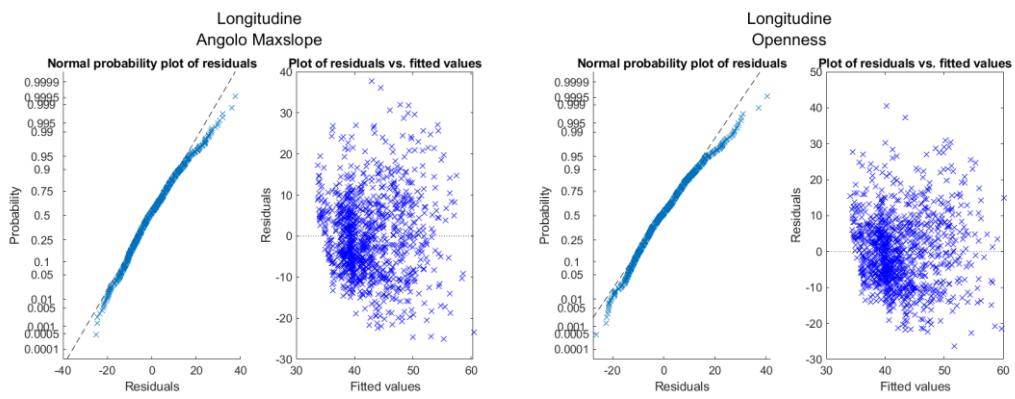
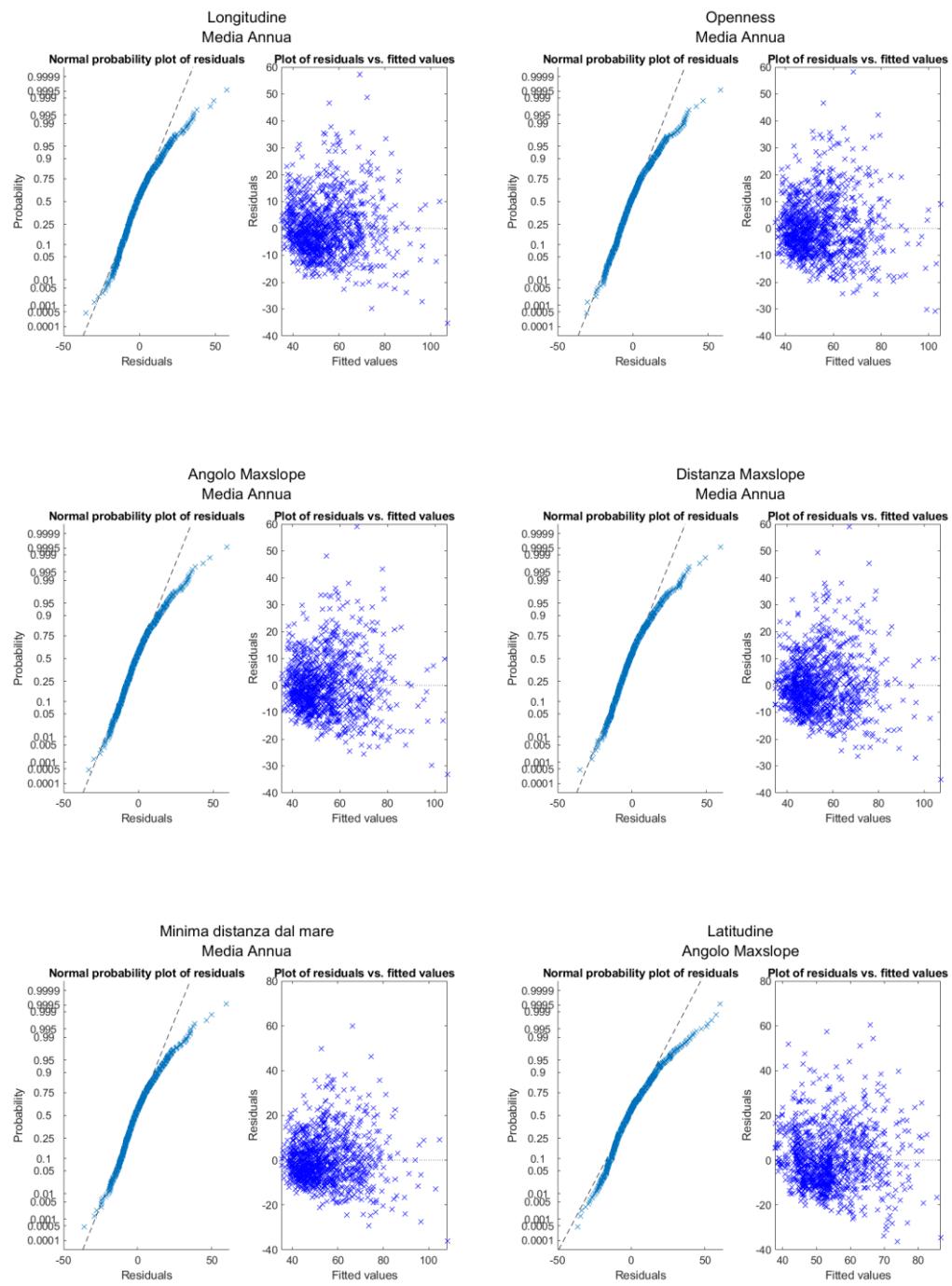


Tabella 73. Regressione 6h con mediana degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Longitudine	Media Annua	0.556	0.555	3.22E+01	-8.26E-06	2.90E-02
Openness	Media Annua	0.551	0.550	7.63E+01	-3.27E+01	2.80E-02
Angolo Maxslope	Media Annua	0.547	0.547	2.45E+01	1.72E-01	2.84E-02
Distanza Maxslope	Media Annua	0.545	0.544	2.55E+01	-2.24E-04	2.97E-02
Minima distanza dal mare	Media Annua	0.544	0.543	2.47E+01	-1.47E-01	3.11E-02
Latitudine	Angolo Maxslope	0.308	0.307	-3.23E+01	1.70E-05	8.88E-01
Latitudine	Openness	0.303	0.302	1.87E+02	1.55E-05	-1.35E+02
Quota	Openness	0.300	0.298	2.25E+02	1.65E-02	-1.15E+02
Quota	Angolo Maxslope	0.274	0.272	4.40E+01	1.51E-02	7.00E-01
Latitudine	Quota	0.272	0.270	-4.35E+01	1.97E-05	2.55E-02

Figura 75. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 2 variabili, area Costa



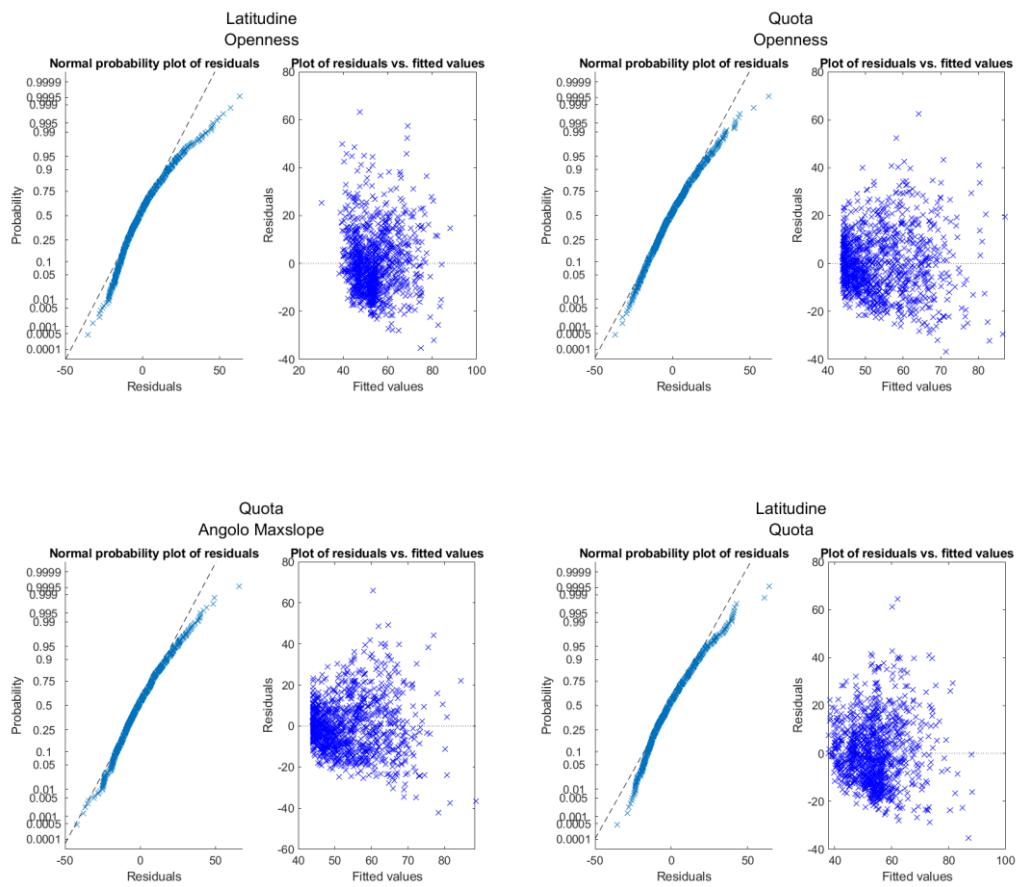
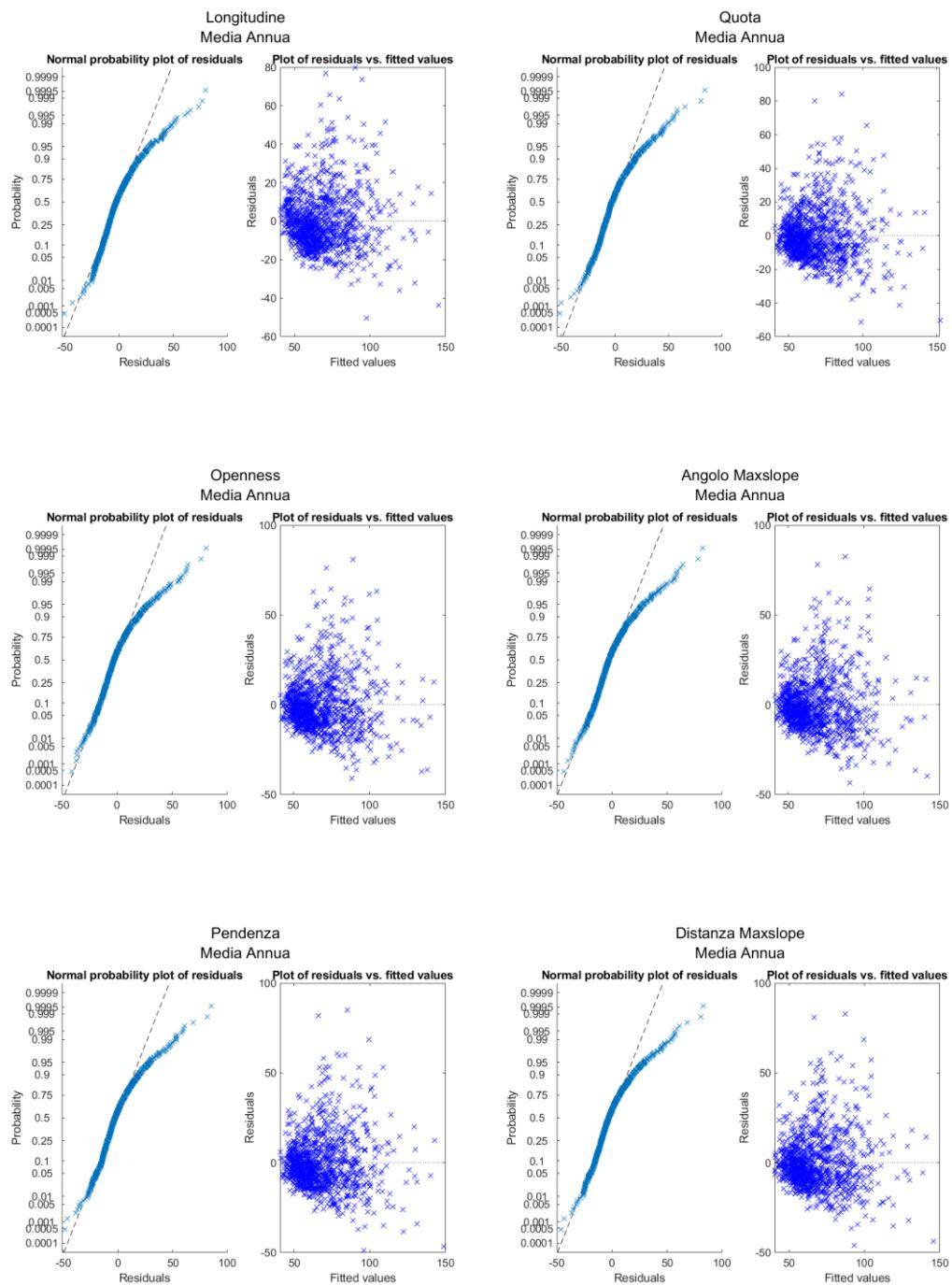


Tabella 74. Regressione 12h con mediana degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Longitudine	Media Annua	0.557	0.556	3.66E+01	-1.22E-05	4.22E-02
Quota	Media Annua	0.555	0.554	2.54E+01	1.11E-02	4.04E-02
Openness	Media Annua	0.554	0.553	1.11E+02	-5.42E+01	4.01E-02
Angolo Maxslope	Media Annua	0.551	0.550	2.54E+01	3.06E-01	4.06E-02
Pendenza	Media Annua	0.545	0.544	2.44E+01	1.85E-01	4.28E-02
Distanza Maxslope	Media Annua	0.544	0.543	2.62E+01	-2.54E-04	4.34E-02
Angolo picco	Media Annua	0.544	0.543	2.45E+01	1.90E-01	4.28E-02
Quota	Openness	0.360	0.359	3.10E+02	3.06E-02	-1.64E+02
Quota	Angolo Maxslope	0.332	0.331	5.21E+01	2.88E-02	9.88E-01
Latitudine	Quota	0.331	0.330	-7.17E+01	2.78E-05	4.35E-02

Figura 76. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 2 variabili, area Costa



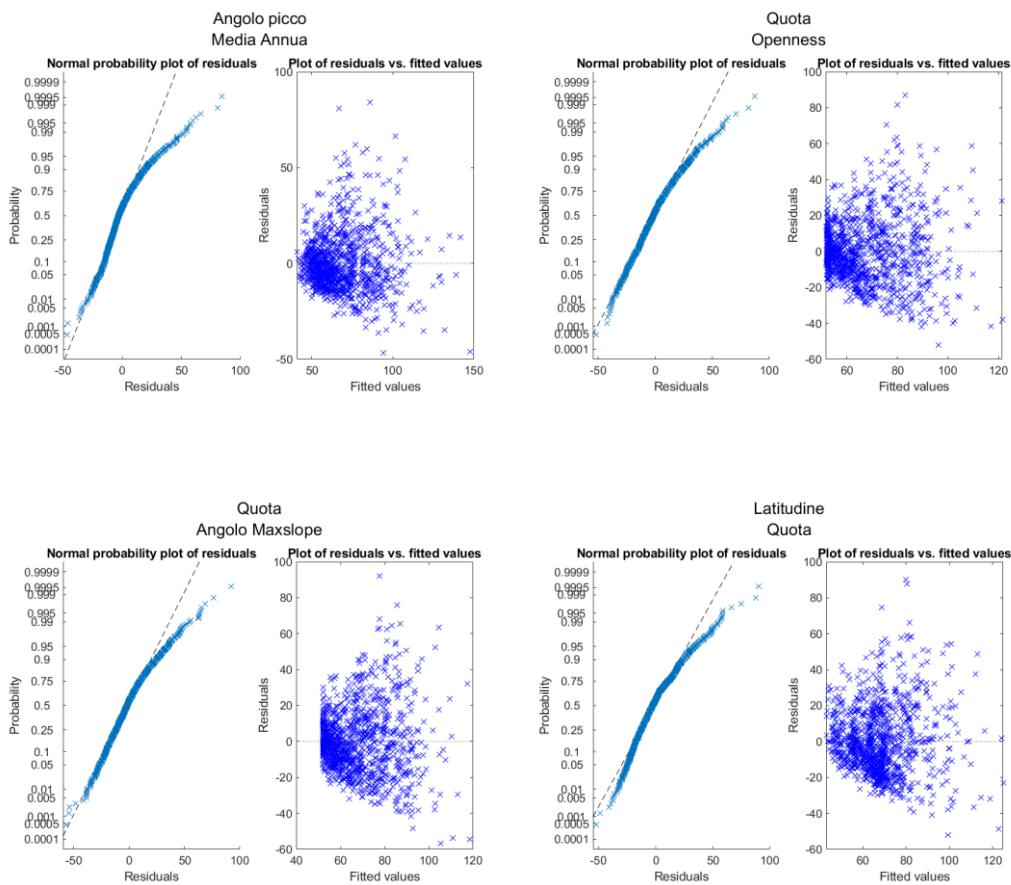
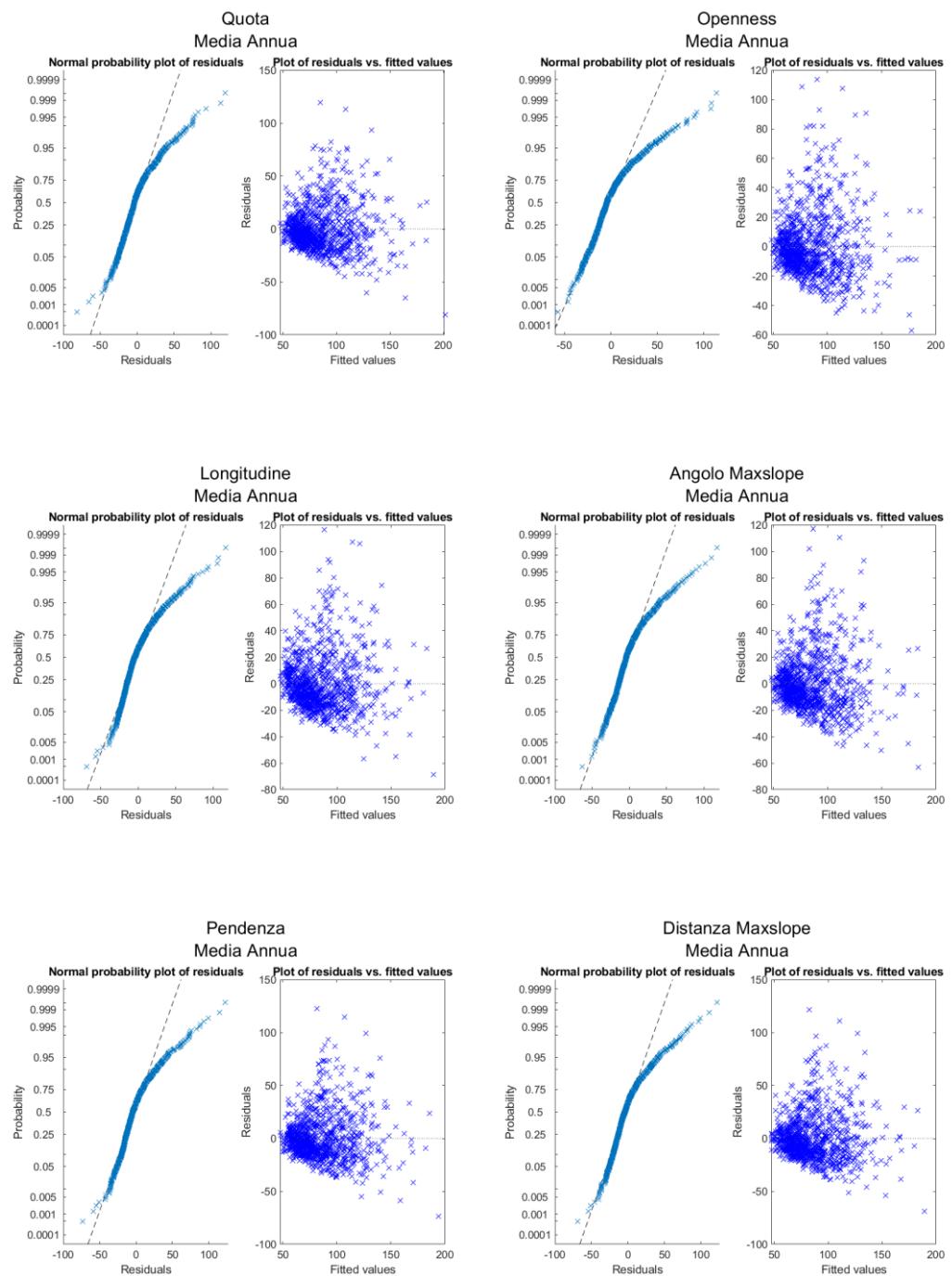


Tabella 75. Regressione 24h con mediana degli estremi, 2 variabili, area Costa.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Quota	Media Annua	0.554	0.553	2.73E+01	2.07E-02	5.27E-02
Openness	Media Annua	0.545	0.544	1.62E+02	-8.57E+01	5.34E-02
Longitudine	Media Annua	0.542	0.542	4.12E+01	-1.58E-05	5.72E-02
Angolo Maxslope	Media Annua	0.540	0.539	2.69E+01	4.62E-01	5.45E-02
Pendenza	Media Annua	0.533	0.532	2.54E+01	2.95E-01	5.76E-02
Distanza Maxslope	Media Annua	0.531	0.530	2.78E+01	-3.37E-04	5.89E-02
Angolo picco	Media Annua	0.531	0.530	2.55E+01	2.61E-01	5.79E-02
Quota	Openness	0.393	0.392	4.18E+02	4.56E-02	-2.27E+02
Quota	Angolo Maxslope	0.358	0.357	6.19E+01	4.34E-02	1.33E+00
Latitudine	Quota	0.356	0.355	-1.04E+02	3.72E-05	6.31E-02

Figura 77. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 2 variabili, area Costa



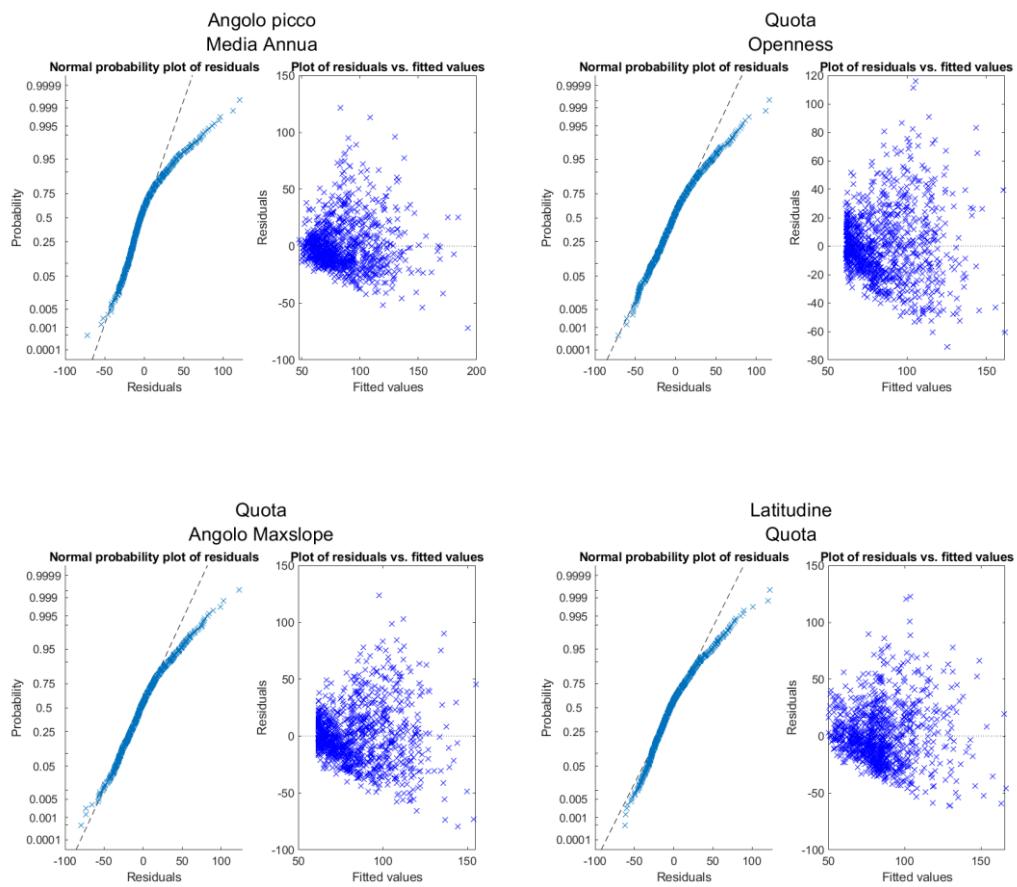
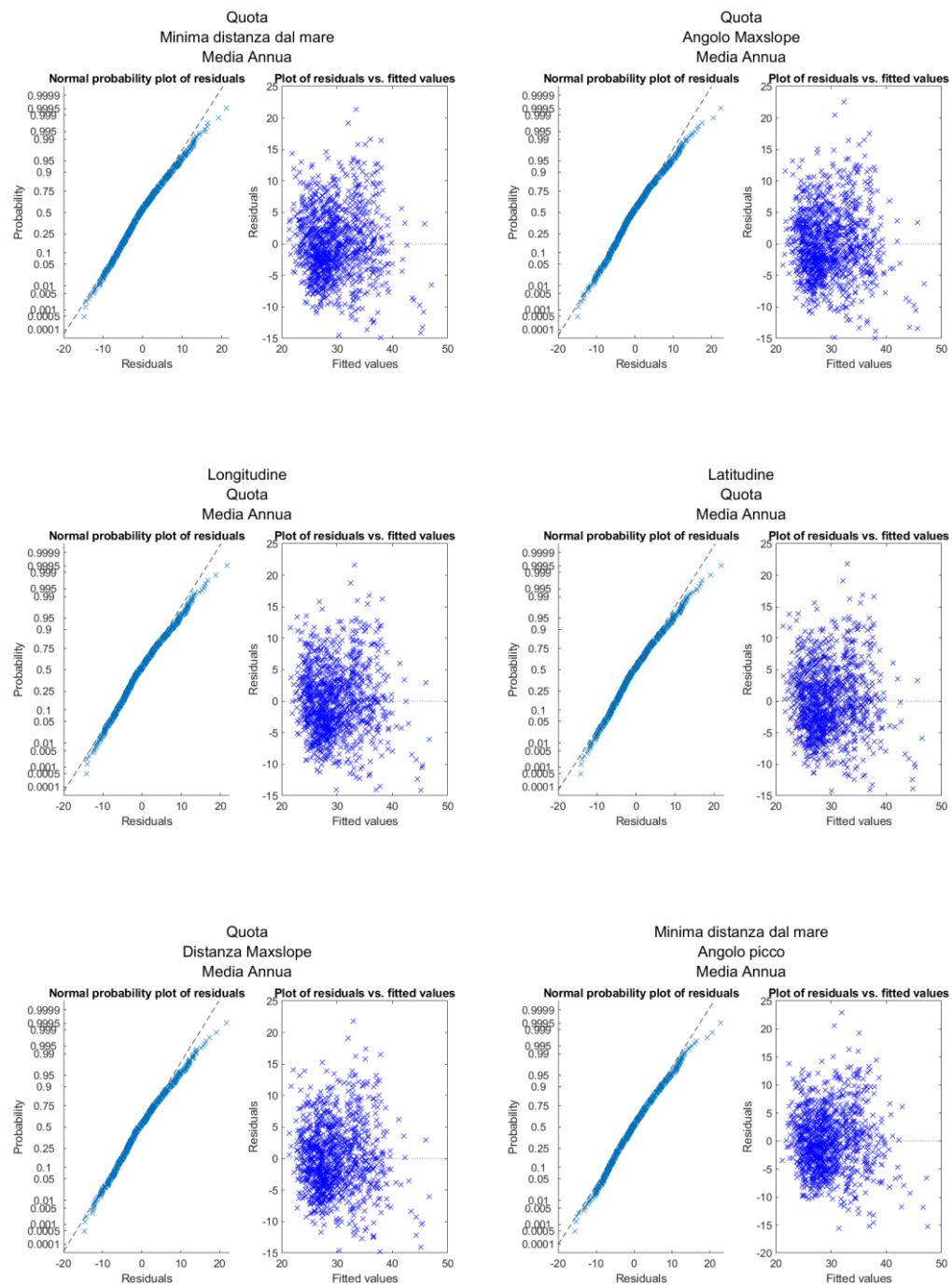


Tabella 76. Regressione 1h con mediana degli estremi, 3 variabili, area Costa.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Quota	Minima distanza dal mare	Media Annua	0.391	0.390	1.95E+01	-5.46E-03	-1.18E-01	1.28E-02
Quota	Angolo Maxslope	Media Annua	0.387	0.385	1.86E+01	-6.44E-03	-6.41E-02	1.34E-02
Longitudine	Quota	Media Annua	0.387	0.385	2.07E+01	-1.87E-06	-6.38E-03	1.23E-02
Latitudine	Quota	Media Annua	0.387	0.385	1.13E+01	1.73E-06	-5.78E-03	1.20E-02
Quota	Distanza Maxslope	Media Annua	0.385	0.384	1.94E+01	-6.60E-03	-8.18E-05	1.25E-02
Minima distanza dal mare	Angolo picco	Media Annua	0.373	0.371	2.04E+01	-2.10E-01	-1.40E-01	1.23E-02
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.369	0.367	2.02E+01	-2.08E-01	-8.51E-02	1.22E-02
Pendenza	Minima distanza dal mare	Media Annua	0.369	0.367	2.04E+01	-8.32E-02	-2.02E-01	1.19E-02
Longitudine	Minima distanza dal mare	Media Annua	0.367	0.365	2.27E+01	-2.34E-06	-2.00E-01	1.08E-02
Minima distanza dal mare	Distanza Maxslope	Media Annua	0.364	0.362	2.10E+01	-2.07E-01	-8.72E-05	1.09E-02

Figura 78. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 3 variabili, area Costa



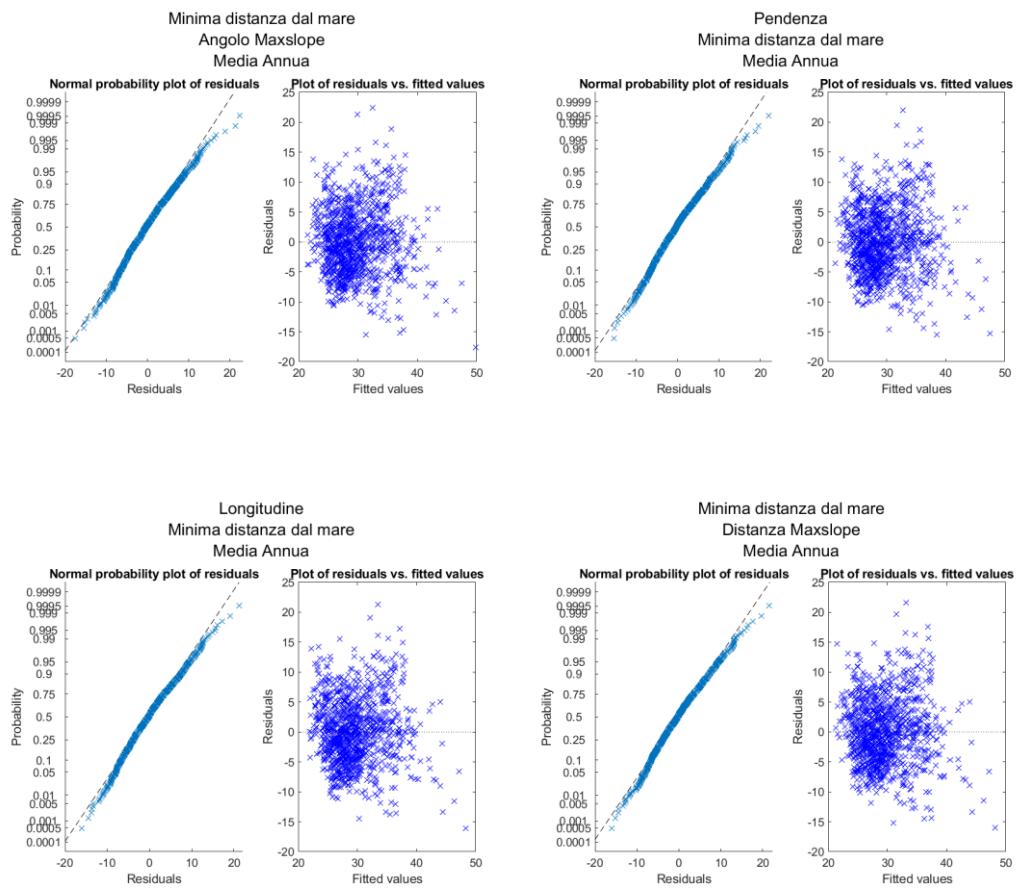
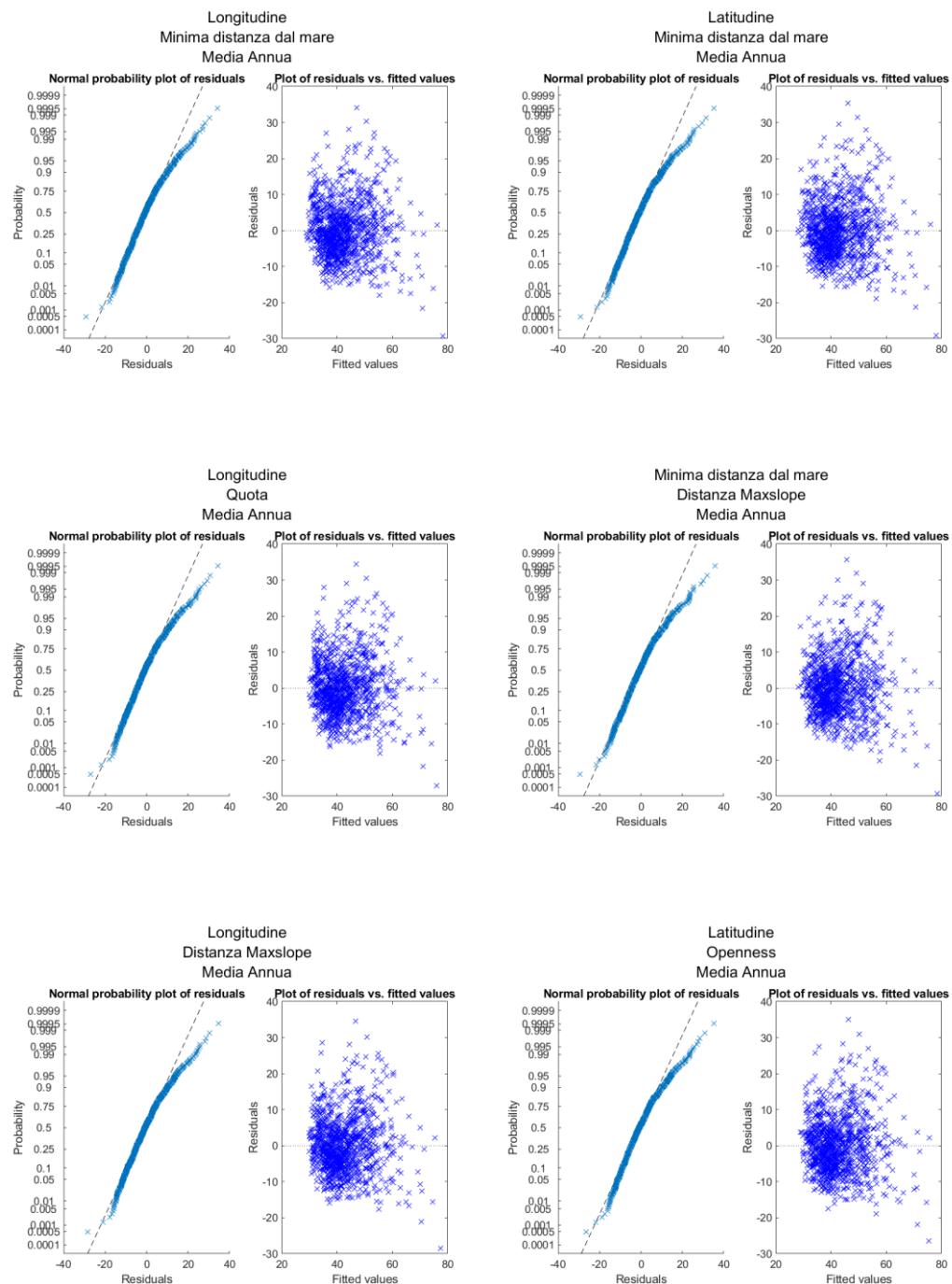


Tabella 77. Regressione 3h con mediana degli estremi, 3 variabili, area Costa.

	Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>
Longitudine	Minima distanza dal mare	Media Annua	0.509	0.508	2.97E+01	-5.78E-06	-2.21E-01	2.00E-02
Latitudine	Minima distanza dal mare	Media Annua	0.502	0.500	8.87E+00	3.44E-06	-2.20E-01	2.01E-02
Longitudine	Quota	Media Annua	0.501	0.500	2.82E+01	-5.68E-06	-3.34E-03	2.03E-02
Minima distanza dal mare	Distanza Maxslope	Media Annua	0.498	0.496	2.50E+01	-2.37E-01	-1.43E-04	2.06E-02
Longitudine	Distanza Maxslope	Media Annua	0.498	0.496	2.95E+01	-5.91E-06	-1.08E-04	1.88E-02
Latitudine	Openness	Media Annua	0.491	0.490	2.47E+01	4.36E-06	1.31E+01	1.80E-02
Latitudine	Quota	Media Annua	0.491	0.489	9.91E+00	2.90E-06	-2.60E-03	2.03E-02
Quota	Distanza Maxslope	Media Annua	0.490	0.488	2.34E+01	-3.99E-03	-1.35E-04	2.11E-02
Distanza picco	Distanza Maxslope	Media Annua	0.485	0.484	2.34E+01	1.38E-04	-1.78E-04	1.97E-02
Latitudine	Quota	Angolo Maxslope	0.317	0.316	3.13E+01	1.47E-05	8.89E-03	4.51E-01

Figura 79. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 3 variabili, area Costa



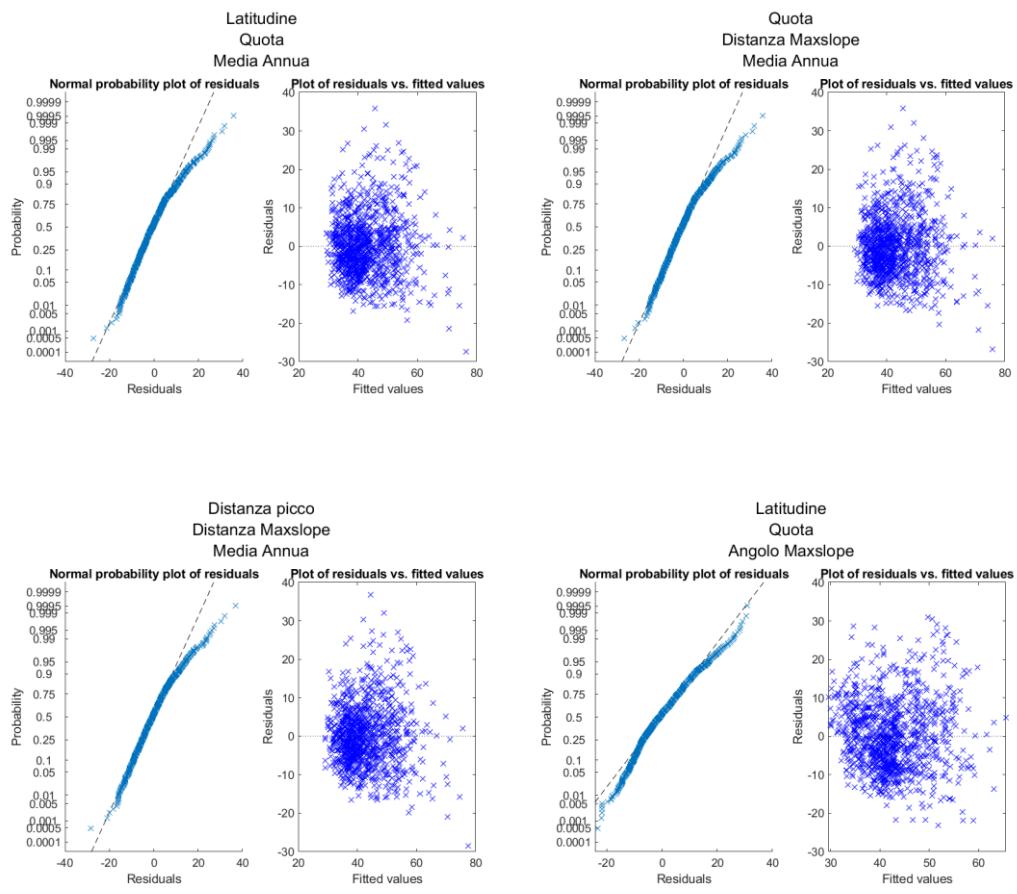
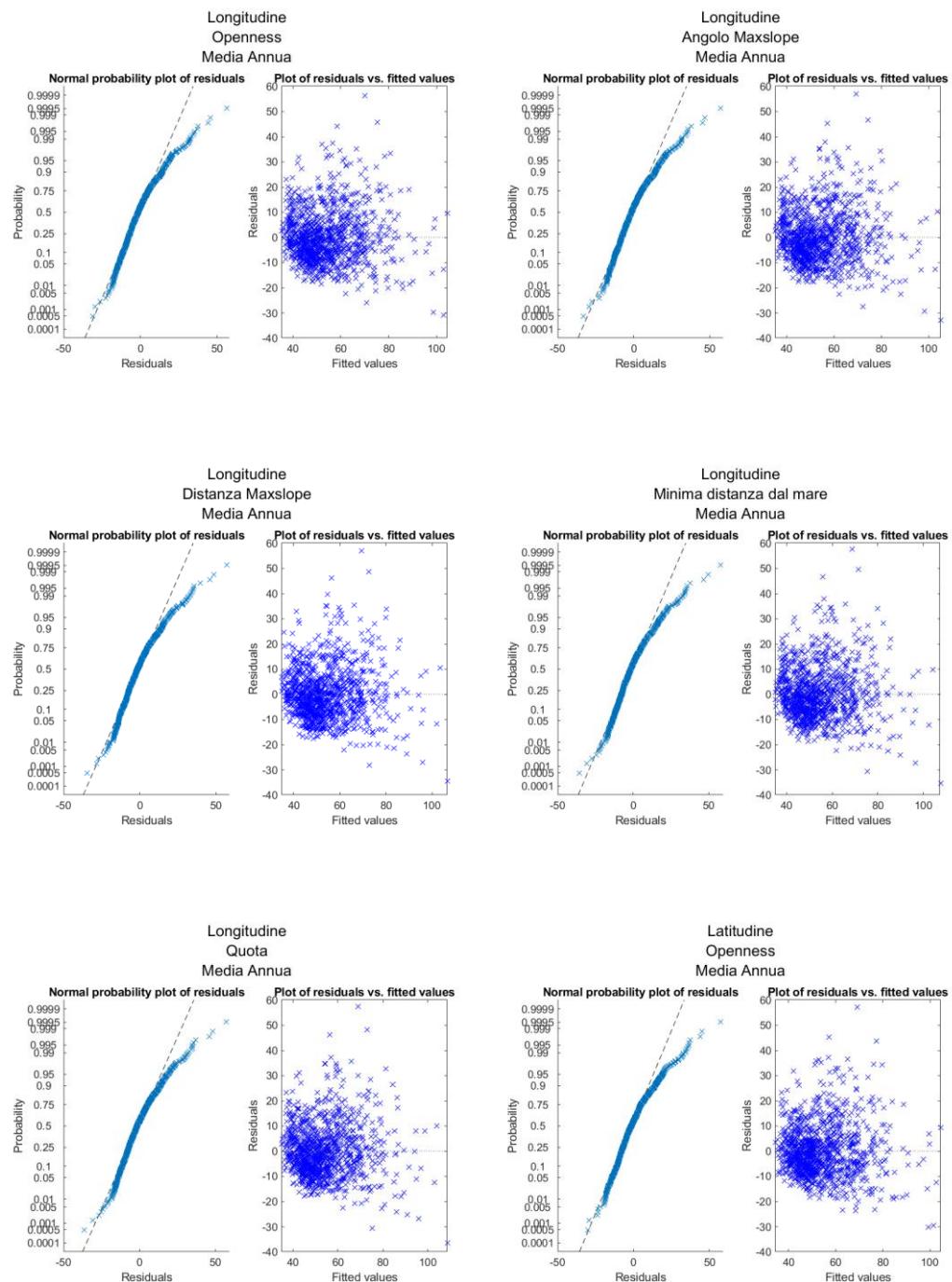


Tabella 78. Regressione 6h con mediana degli estremi, 3 variabili, area Costa.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>
Longitudine	Openness	Media Annua	0.563	0.562	7.64E+01	-7.57E-06	-2.81E+01	2.70E-02
Longitudine	Angolo Maxslope	Media Annua	0.561	0.559	3.22E+01	-7.78E-06	1.45E-01	2.74E-02
Longitudine	Distanza Maxslope	Media Annua	0.559	0.558	3.33E+01	-7.98E-06	-1.91E-04	2.85E-02
Longitudine	Minima distanza dal mare	Media Annua	0.559	0.557	3.27E+01	-8.09E-06	-1.31E-01	2.96E-02
Longitudine	Quota	Media Annua	0.558	0.557	3.27E+01	-8.56E-06	2.66E-03	2.81E-02
Latitudine	Openness	Media Annua	0.554	0.553	6.83E+01	3.52E-06	-3.74E+01	2.67E-02
Minima distanza dal mare	Openness	Media Annua	0.554	0.553	7.78E+01	-1.54E-01	-3.32E+01	2.85E-02
Minima distanza dal mare	Angolo Maxslope	Media Annua	0.550	0.549	2.52E+01	-1.41E-01	1.69E-01	2.90E-02
Angolo Maxslope	Distanza Maxslope	Media Annua	0.549	0.548	2.55E+01	1.44E-01	-1.51E-04	2.83E-02
Minima distanza dal mare	Distanza Maxslope	Media Annua	0.548	0.547	2.64E+01	-1.53E-01	-2.30E-04	3.03E-02

Figura 80. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 3 variabili, area Costa



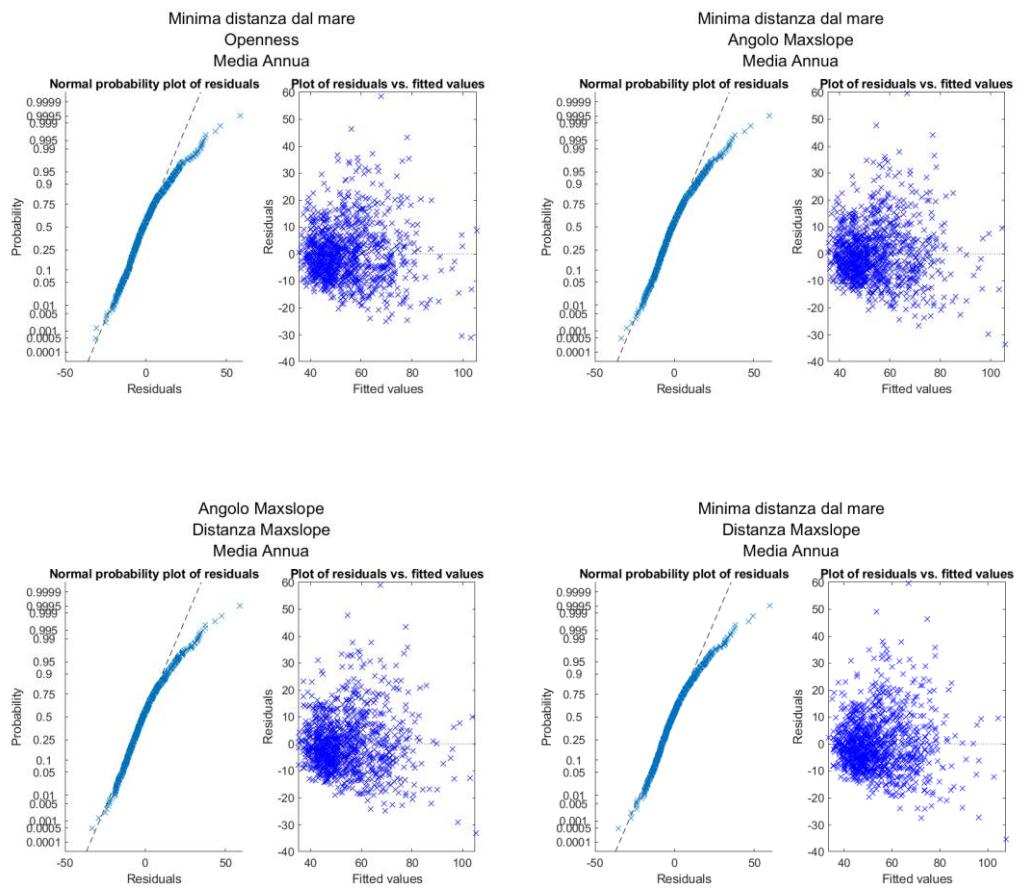
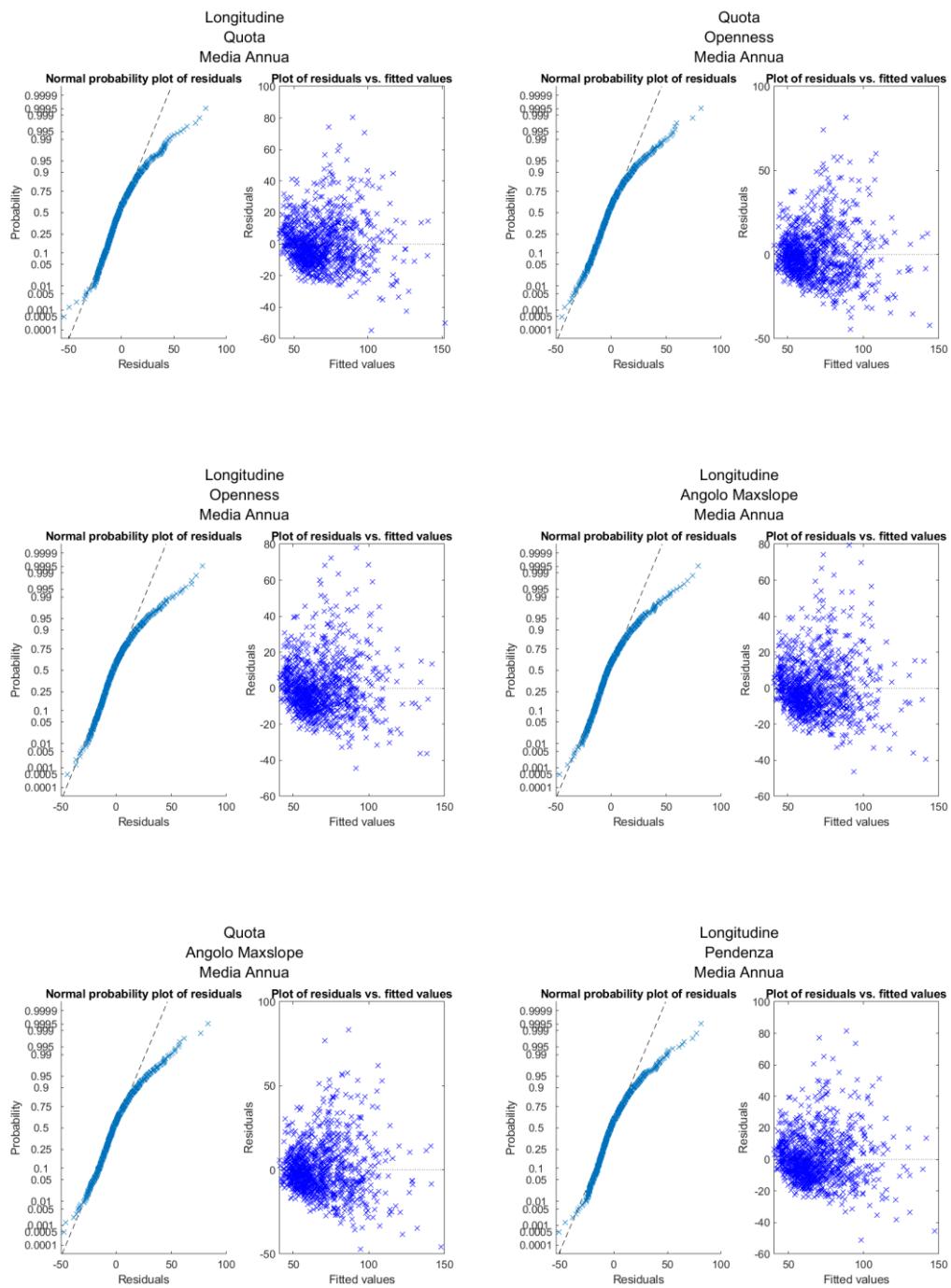


Tabella 79. Regressione 12h con mediana degli estremi, 3 variabili, area Costa.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Quota	Media Annua	0.574	0.573	3.92E+01	-1.36E-05	1.26E-02	3.75E-02
Quota	Openness	Media Annua	0.568	0.567	1.15E+02	1.14E-02	5.59E+01	3.60E-02
Longitudine	Openness	Media Annua	0.566	0.565	1.11E+02	-1.10E-05	4.74E+01	3.87E-02
Longitudine	Angolo Maxslope	Media Annua	0.564	0.563	3.66E+01	-1.13E-05	2.67E-01	3.91E-02
Quota	Angolo Maxslope	Media Annua	0.563	0.561	2.63E+01	1.04E-02	2.81E-01	3.73E-02
Longitudine	Pendenza	Media Annua	0.559	0.558	3.61E+01	-1.17E-05	1.41E-01	4.11E-02
Quota	Minima distanza dal mare	Media Annua	0.558	0.556	2.67E+01	1.32E-02	-2.21E-01	4.05E-02
Quota	Distanza Maxslope	Media Annua	0.557	0.556	2.72E+01	1.10E-02	-2.48E-04	3.96E-02
Quota	Distanza picco	Media Annua	0.557	0.556	2.44E+01	1.18E-02	2.27E-04	4.04E-02
Pendenza	Distanza Maxslope	Media Annua	0.547	0.546	2.60E+01	1.72E-01	-2.25E-04	4.21E-02

Figura 81. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 3 variabili, area Costa



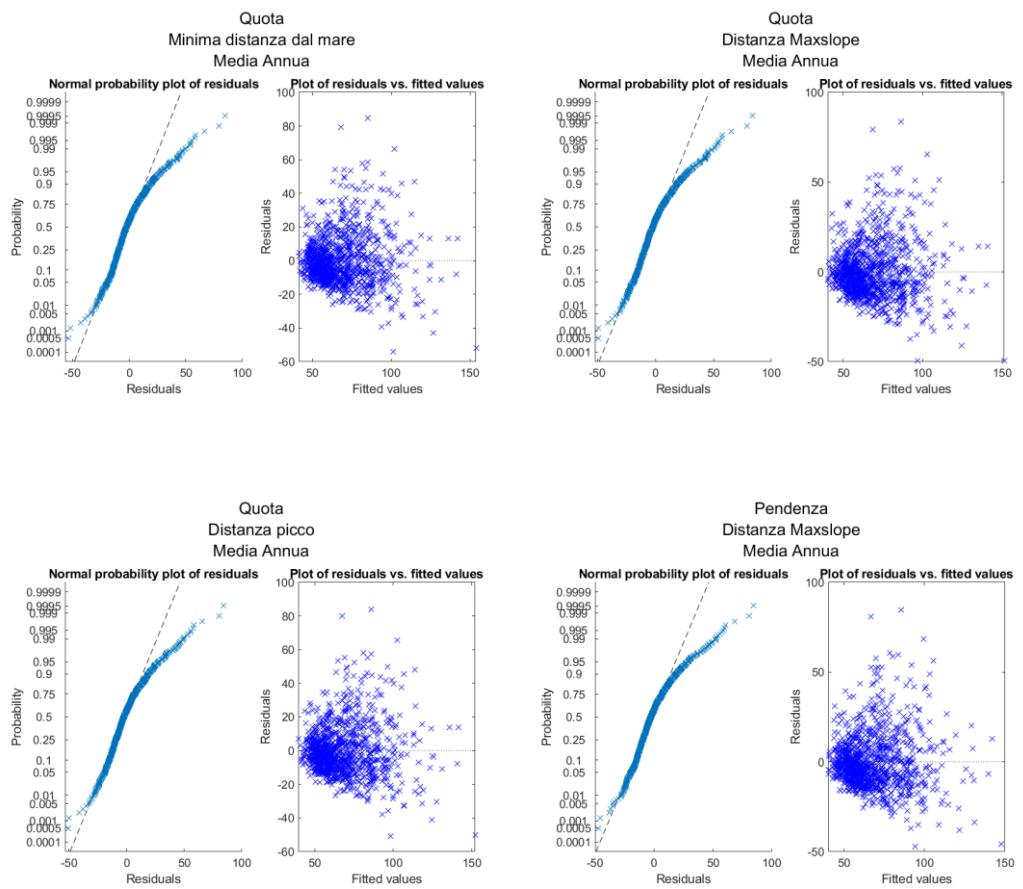
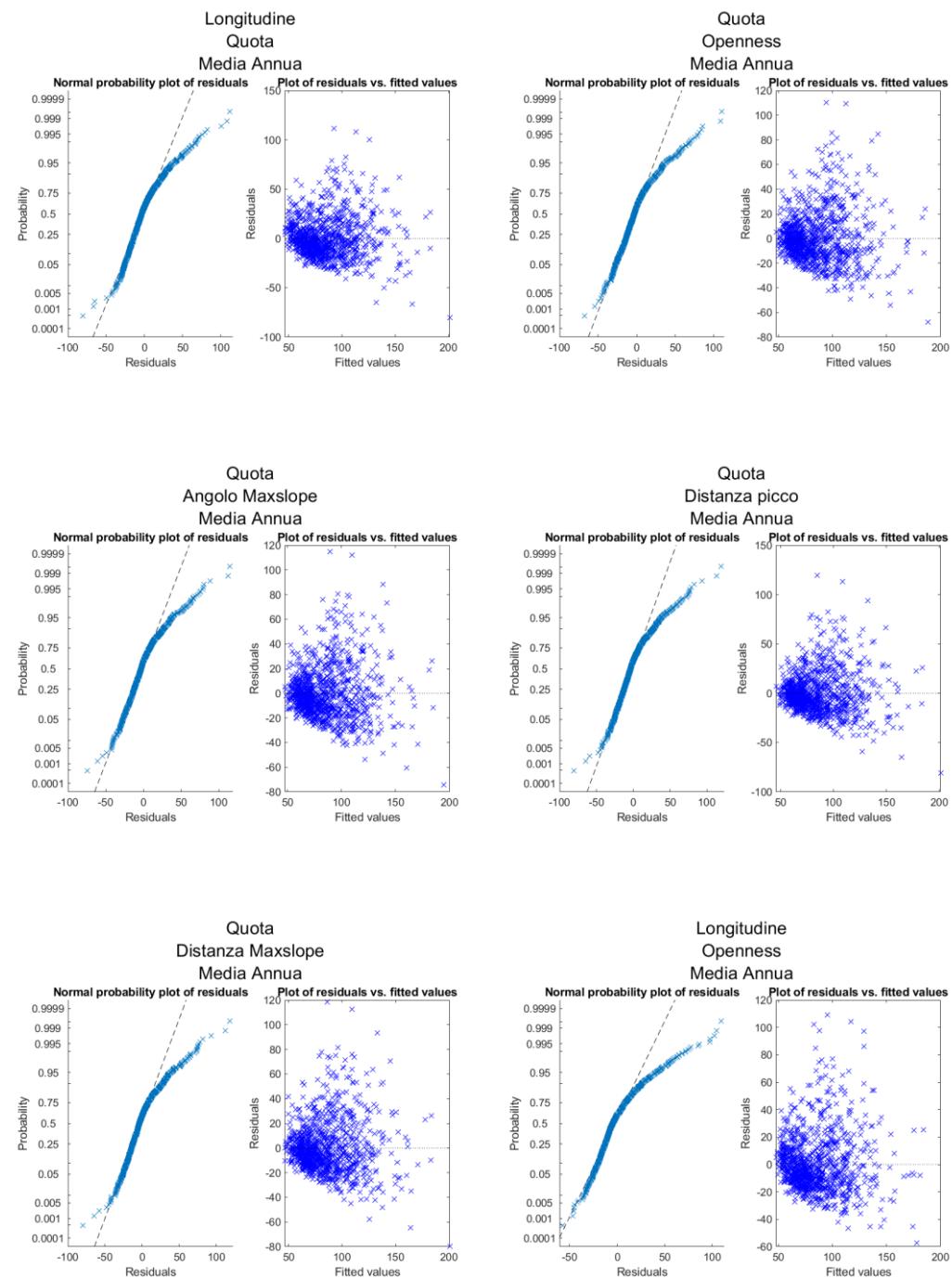
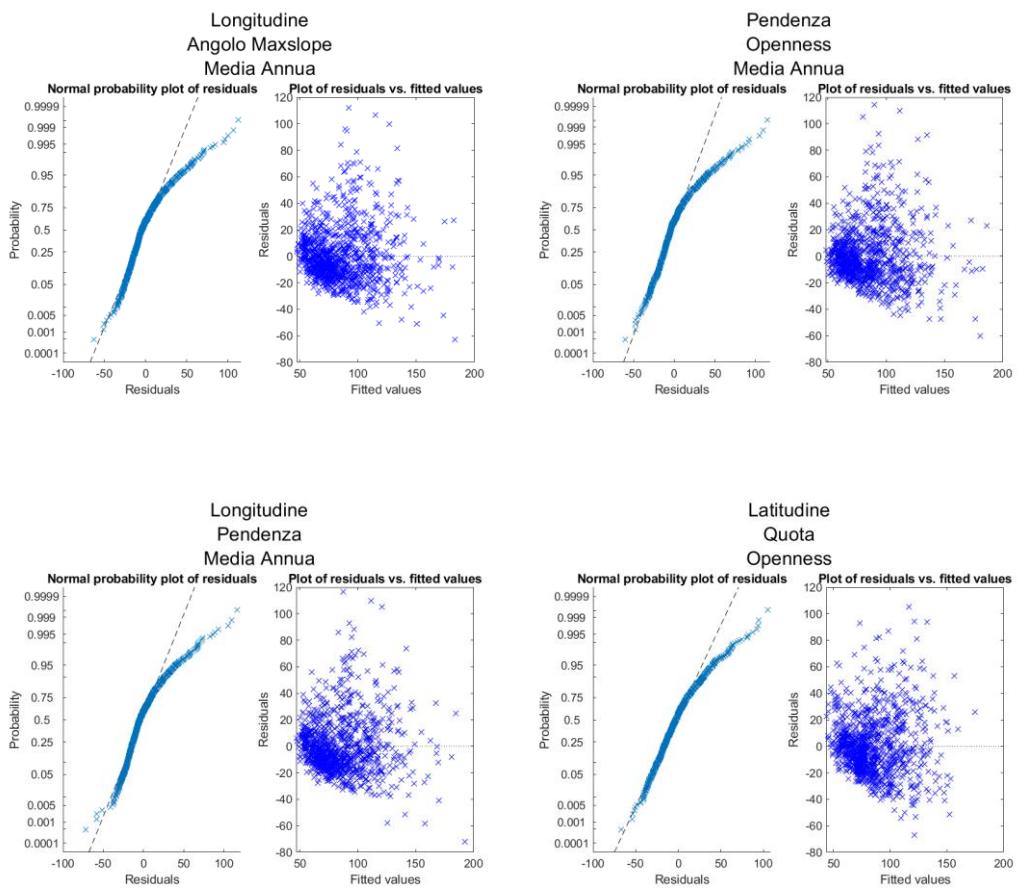


Tabella 80. Regressione 24h con mediana degli estremi, 3 variabili, area Costa.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Quota	Media Annua	0.572	0.571	4.59E+01	-1.84E-05	2.27E-02	4.88E-02
Quota	Openness	Media Annua	0.571	0.570	1.69E+02	2.12E-02	8.88E+01	4.57E-02
Quota	Angolo Maxslope	Media Annua	0.562	0.561	2.86E+01	1.98E-02	4.14E-01	4.81E-02
Quota	Distanza picco	Media Annua	0.556	0.555	2.57E+01	2.18E-02	3.56E-04	5.26E-02
Quota	Distanza Maxslope	Media Annua	0.556	0.554	2.96E+01	2.06E-02	-3.26E-04	5.17E-02
Longitudine	Openness	Media Annua	0.556	0.554	1.63E+02	-1.39E-05	7.72E+01	5.17E-02
Longitudine	Angolo Maxslope	Media Annua	0.551	0.550	4.12E+01	-1.44E-05	4.12E-01	5.26E-02
Pendenza	Openness	Media Annua	0.547	0.545	1.52E+02	1.80E-01	7.94E+01	5.24E-02
Longitudine	Pendenza	Media Annua	0.546	0.544	4.03E+01	-1.49E-05	2.38E-01	5.54E-02
Latitudine	Quota	Openness	0.496	0.495	2.40E+02	3.54E-05	5.24E-02	2.19E+02

Figura 82. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 3 variabili, area Costa





**Allegato 8 – Regressioni lineari multiple per l’area Campania**

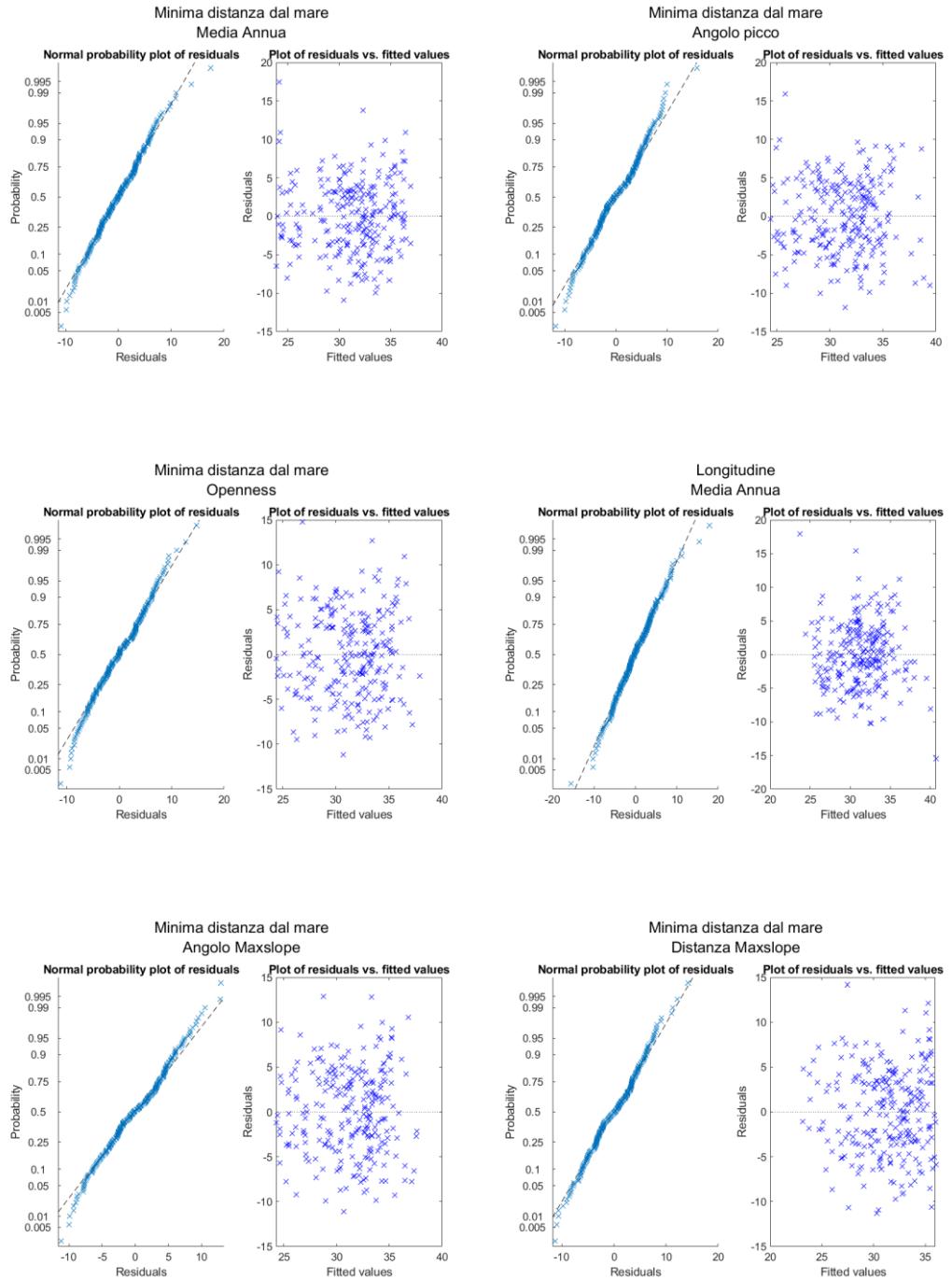
***Regressioni con la media delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h***

Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la media degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l’area Campania. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 81. Regressione 1h con media degli estremi, 2 variabili, area Campania.*

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Min Dist. dal Mare	Media annua	0.342	0.336	2.59E+01	-1.08E-01	7.15E-03	1.16	1.16
Min Dist. dal Mare	Angolo picco	0.305	0.300	3.24E+01	-1.25E-01	2.43E-01	1.08	1.08
Min Dist. dal Mare	Openness	0.303	0.297	7.43E+01	-1.37E-01	-2.61E+01	1.01	1.01
Longitudine	Media annua	0.298	0.293	5.98E+01	-4.22E-05	1.11E-02	1.02	1.02
Min Dist. dal Mare	Angolo maxslope	0.296	0.290	3.31E+01	-1.31E-01	1.54E-01	1.04	1.04
Min Dist. dal Mare	Distanza maxslope	0.289	0.284	3.61E+01	-1.35E-01	-2.91E-04	1.02	1.02
Quota	Media annua	0.275	0.269	1.97E+01	-5.13E-03	1.14E-02	1.05	1.05
Longitudine	Min Dist. dal Mare	0.268	0.262	5.46E+01	-1.98E-05	-1.36E-01	1.03	1.03
Min Dist. dal Mare	Distanza picco	0.265	0.259	3.59E+01	-1.40E-01	-1.75E-04	1.01	1.01
Angolo picco	Media annua	0.234	0.228	1.99E+01	1.52E-01	8.49E-03	1.41	1.41

Figura 83. Diagrammi diagnostici per regressione 1h con media degli estremi, 2 variabili, area Campania



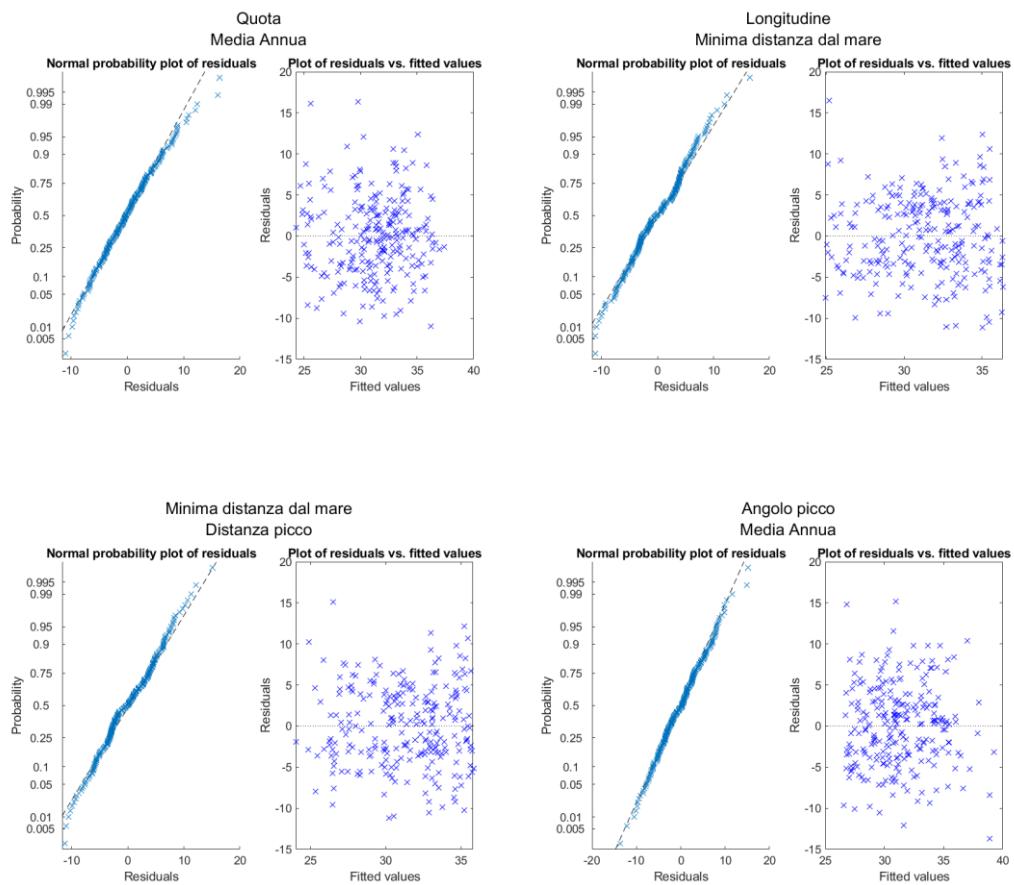
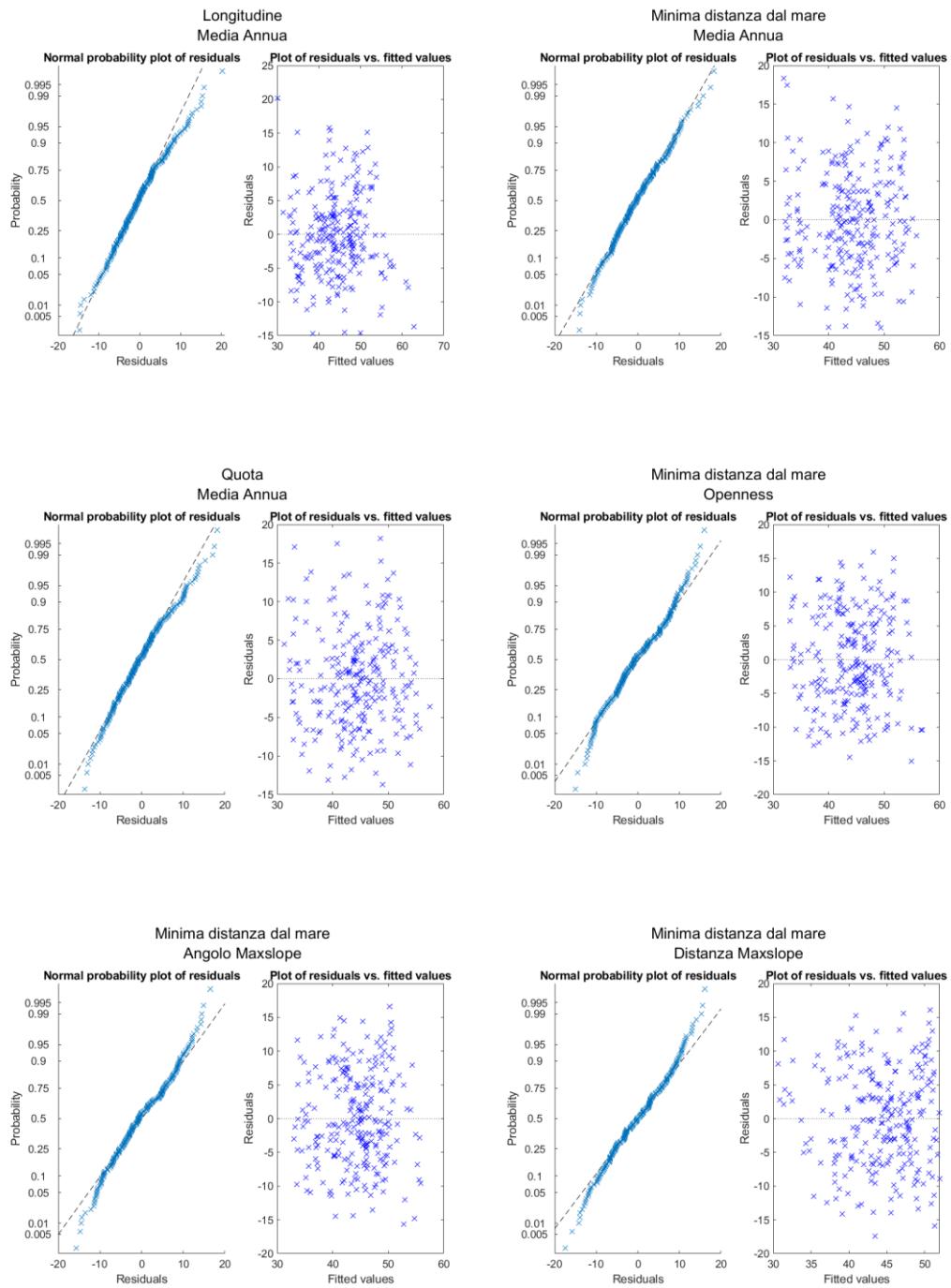


Tabella 82. Regressione 3h con media degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Longitudine	Media annua	0.495	0.491	8.63E+01	-6.93E-05	2.24E-02	1.02	1.02
Min Dist. dal Mare	Media annua	0.478	0.474	2.75E+01	-1.29E-01	1.73E-02	1.16	1.16
Quota	Media annua	0.459	0.454	2.04E+01	-7.87E-03	2.28E-02	1.05	1.05
Min Dist. dal Mare	Openness	0.373	0.368	1.43E+02	-1.98E-01	-6.21E+01	1.01	1.01
Min Dist. dal Mare	Angolo maxslope	0.350	0.344	4.52E+01	-1.85E-01	3.56E-01	1.04	1.04
Min Dist. dal Mare	Distanza maxslope	0.319	0.314	5.21E+01	-1.96E-01	-6.11E-04	1.02	1.02
Min Dist. dal Mare	Angolo picco	0.304	0.299	4.58E+01	-1.84E-01	3.85E-01	1.08	1.08
Quota	Min Dist. dal Mare	0.264	0.258	4.92E+01	4.98E-03	-2.44E-01	1.25	1.25
Longitudine	Min Dist. dal Mare	0.263	0.257	8.02E+01	-3.07E-05	-2.03E-01	1.03	1.03
Longitudine	Angolo maxslope	0.241	0.235	9.62E+01	-5.82E-05	4.74E-01	1.01	1.01

Figura 84. Diagrammi diagnostici per regressione 3h con media degli estremi, 2 variabili, area Campania



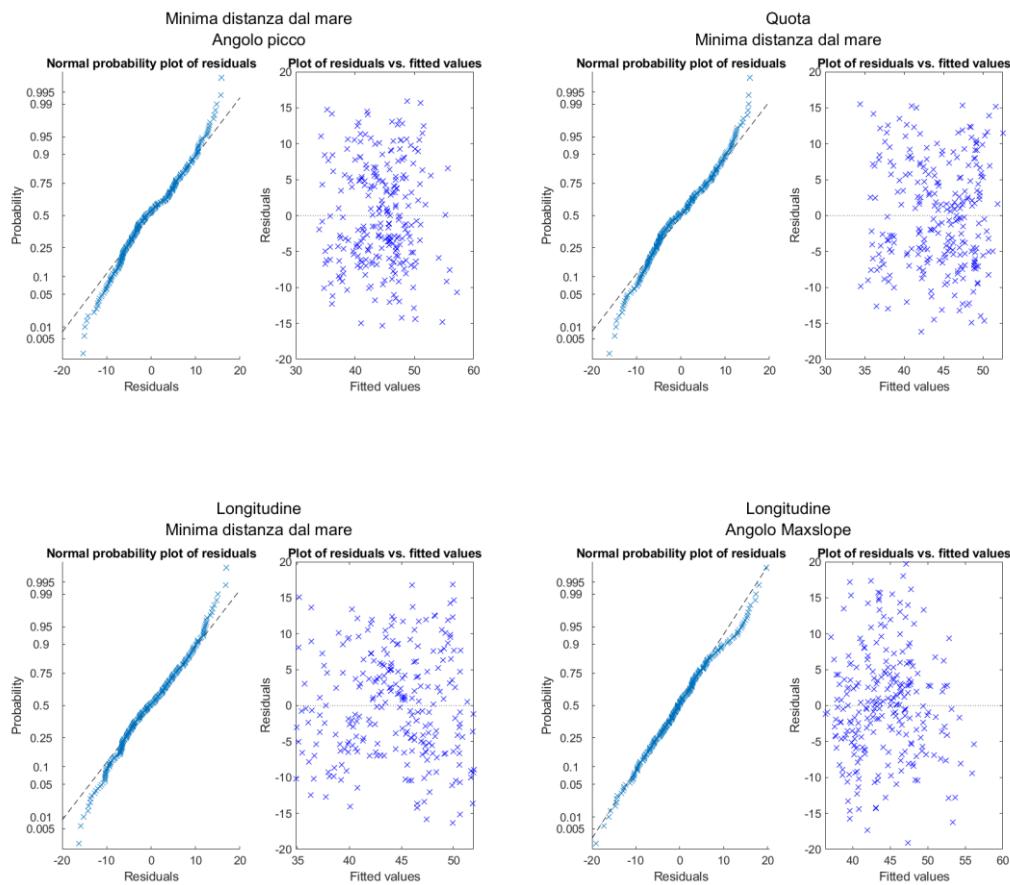
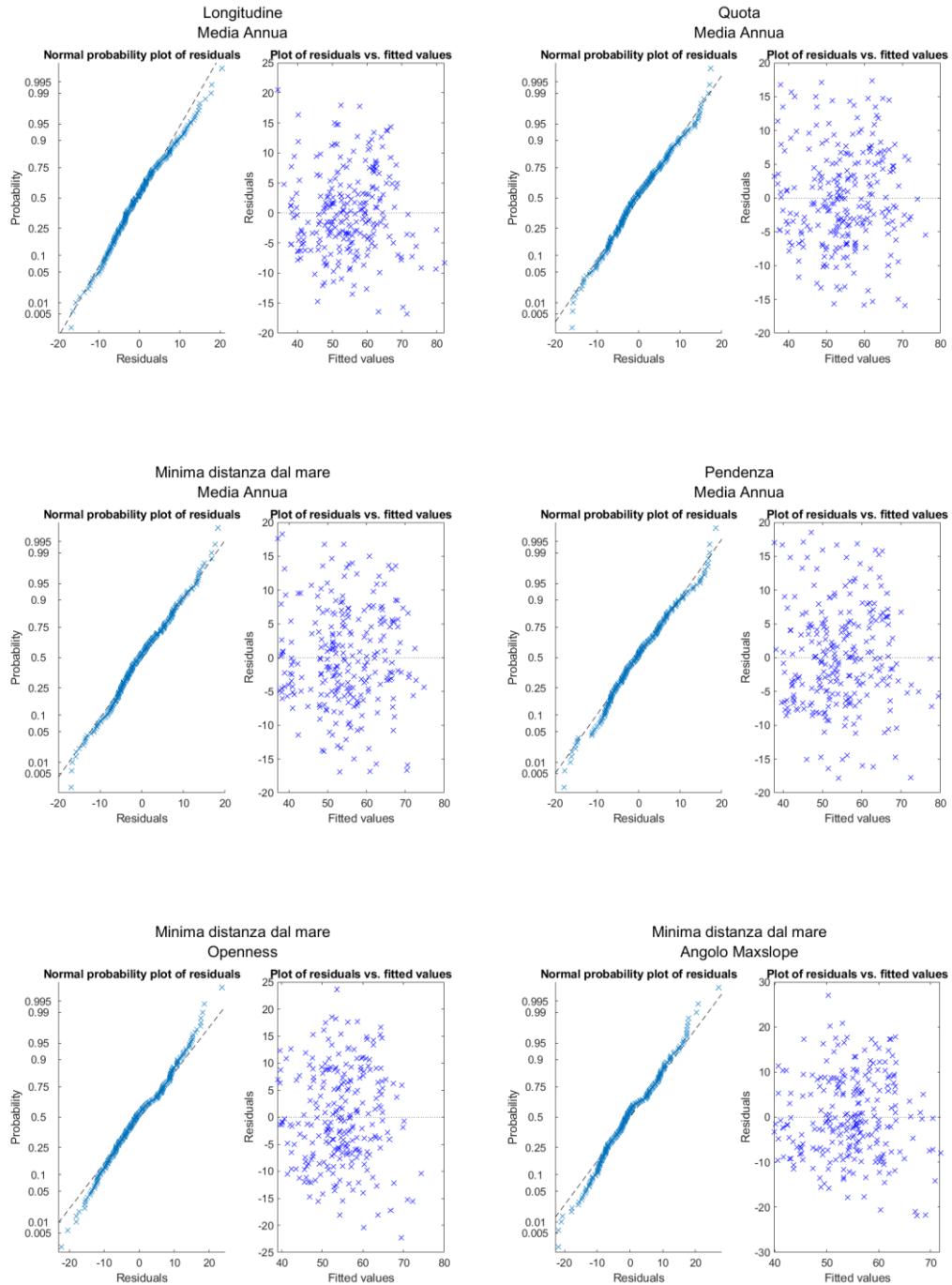


Tabella 83. Regressione 6h con media degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Longitudine	Media annua	0.634	0.631	9.38E+01	-8.08E-05	3.45E-02	1.02	1.02
Quota	Media annua	0.602	0.599	1.68E+01	-8.78E-03	3.49E-02	1.05	1.05
Min Dist. dal Mare	Media annua	0.598	0.595	2.32E+01	-1.19E-01	2.95E-02	1.16	1.16
Pendenza	Media annua	0.568	0.565	1.63E+01	-1.27E-01	3.35E-02	1.03	1.03
Min Dist. dal Mare	Openness	0.400	0.395	2.11E+02	-2.38E-01	-9.96E+01	1.01	1.01
Min Dist. dal Mare	Angolo maxslope	0.362	0.356	5.40E+01	-2.17E-01	5.64E-01	1.04	1.04
Min Dist. dal Mare	Distanza maxslope	0.323	0.318	6.49E+01	-2.34E-01	-9.92E-04	1.02	1.02
Min Dist. dal Mare	Angolo picco	0.289	0.283	5.51E+01	-2.18E-01	5.83E-01	1.08	1.08
Longitudine	Openness	0.278	0.272	2.92E+02	-6.62E-05	-1.15E+02	1.01	1.01
Longitudine	Angolo maxslope	0.268	0.263	1.09E+02	-6.32E-05	7.00E-01	1.01	1.01

Figura 85. Diagrammi diagnostici per regressione 6h con media degli estremi, 2 variabili, area Campania



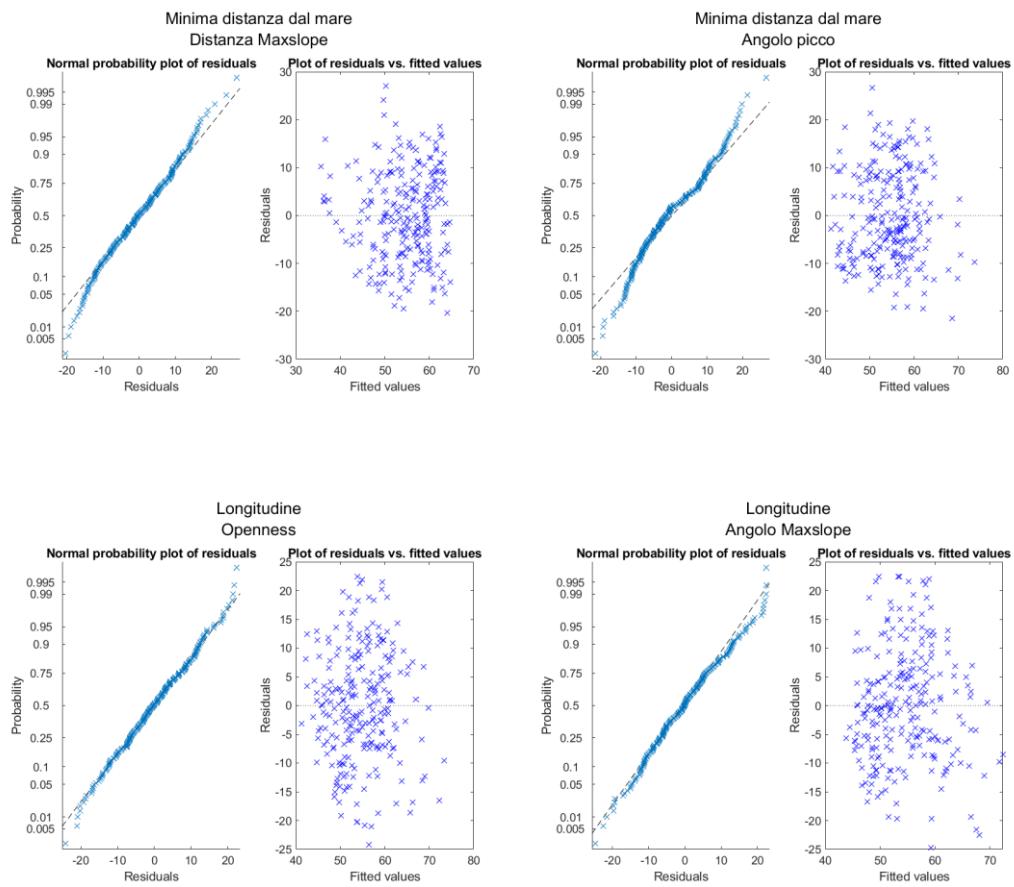
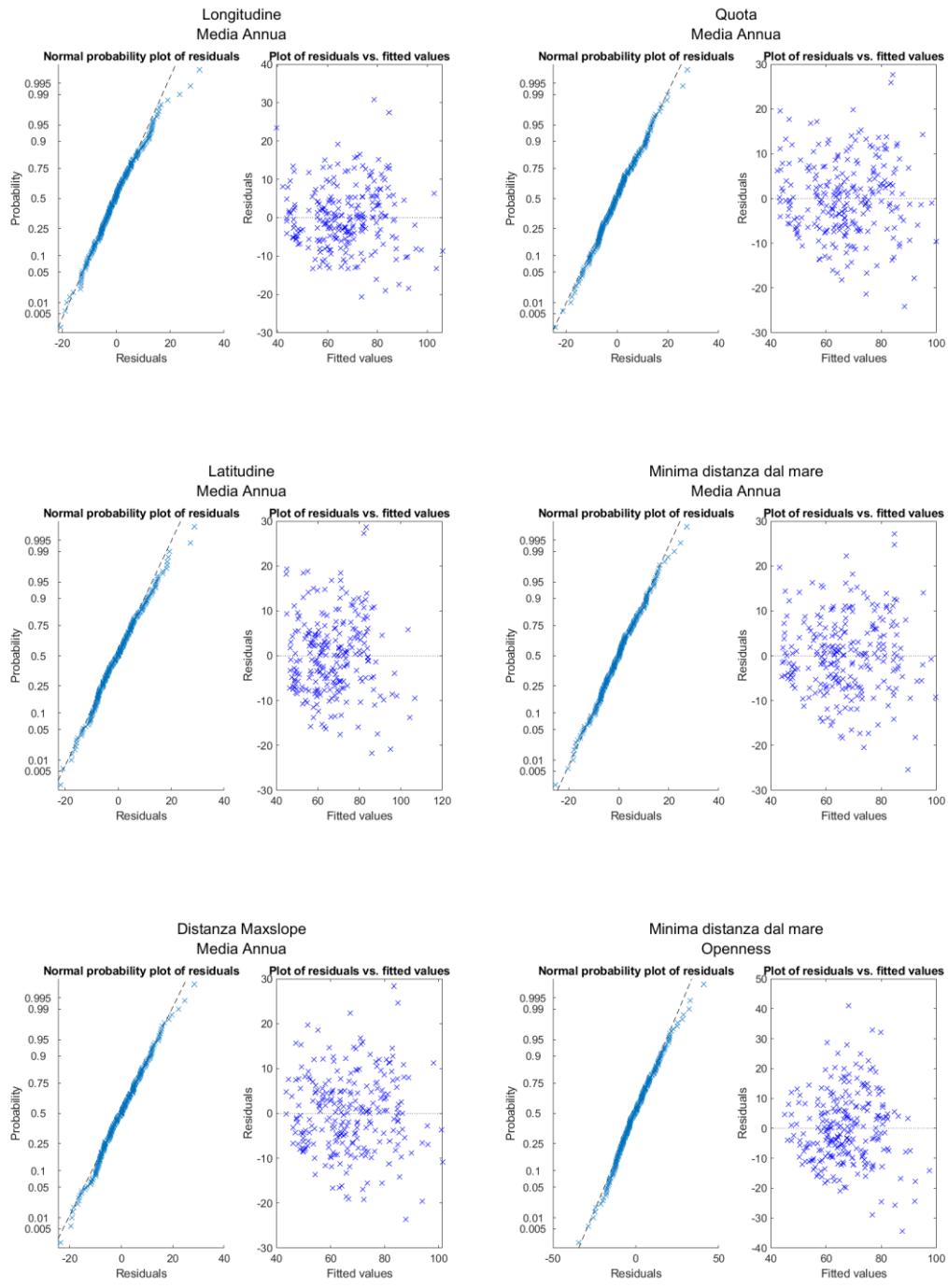


Tabella 84. Regressione 12h con media degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Longitudine	Media annua	0.723	0.721	8.71E+01	-8.05E-05	5.05E-02	1.02	1.02
Quota	Media annua	0.700	0.698	1.04E+01	-7.78E-03	5.07E-02	1.05	1.05
Latitudine	Media annua	0.694	0.692	-2.23E+02	5.06E-05	5.16E-02	1.17	1.17
Min Dist. dal Mare	Media annua	0.692	0.690	1.46E+01	-8.12E-02	4.66E-02	1.16	1.16
Distanza maxslope	Media annua	0.688	0.686	1.34E+01	-3.33E-04	4.67E-02	1.23	1.23
Min Dist. dal Mare	Openness	0.420	0.415	3.11E+02	-2.69E-01	-1.57E+02	1.01	1.01
Min Dist. dal Mare	Angolo maxslope	0.364	0.359	6.32E+01	-2.37E-01	8.83E-01	1.04	1.04
Longitudine	Openness	0.321	0.316	3.87E+02	-6.00E-05	-1.73E+02	1.01	1.01
Latitudine	Openness	0.316	0.310	5.69E+02	-5.70E-05	-1.61E+02	1.03	1.03
Distanza maxslope	Openness	0.316	0.310	2.78E+02	-6.33E-04	-1.39E+02	1.54	1.54

*Figura 86. Diagrammi diagnostici per regressione 12h con media degli estremi, 2 variabili, area Campania*



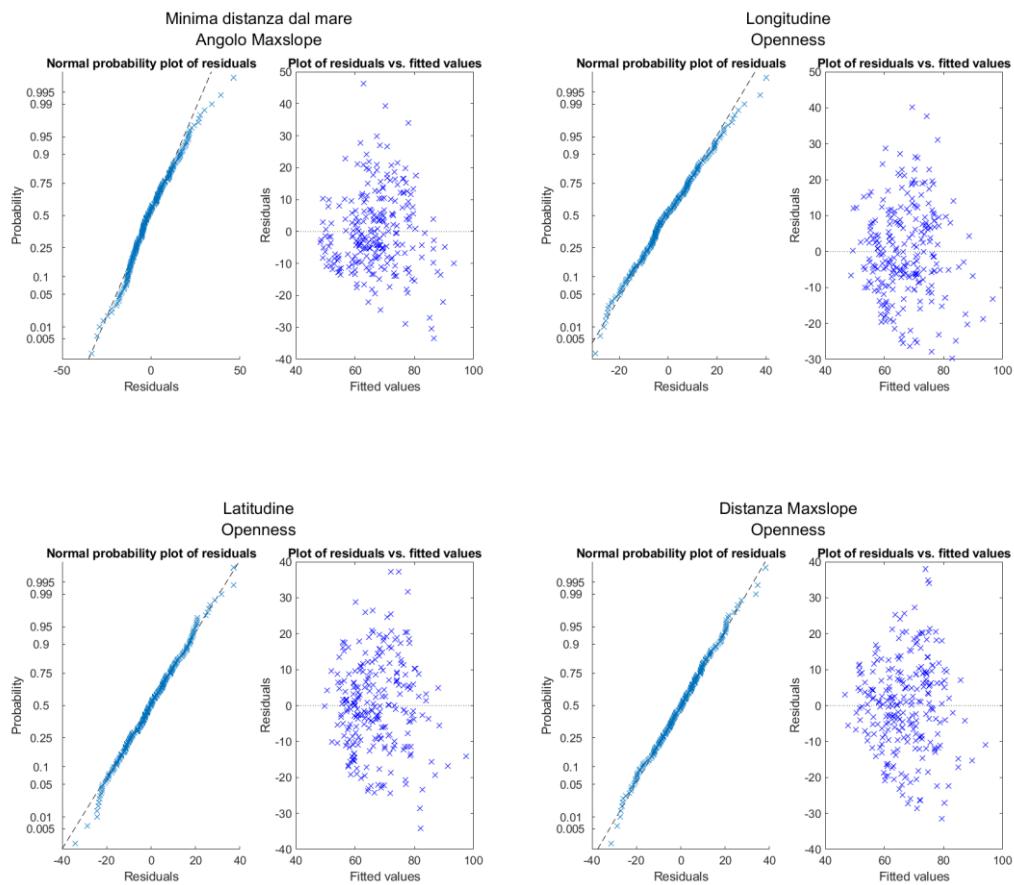
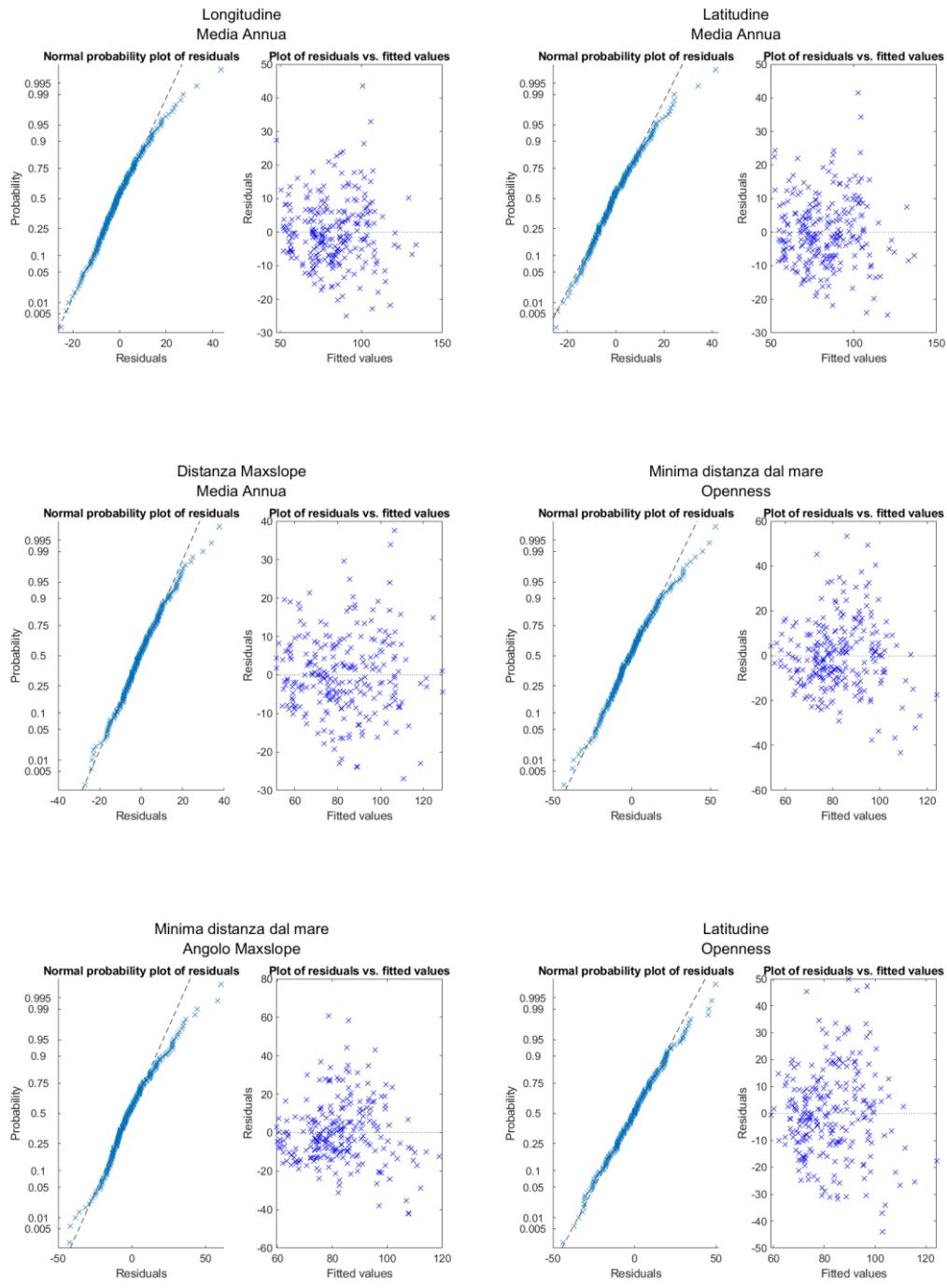


Tabella 85. Regressione 24h con media degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	VIF 1	VIF 2
Longitudine	Media annua	0.755	0.753	7.78E+01	-7.59E-05	6.77E-02	1.02	1.02
Latitudine	Media annua	0.748	0.746	-3.28E+02	7.22E-05	7.00E-02	1.17	1.17
Distanza maxslope	Media annua	0.738	0.736	9.15E+00	-3.81E-04	6.37E-02	1.23	1.23
Min Dist. dal Mare	Openness	0.412	0.408	4.19E+02	-2.92E-01	-2.18E+02	1.01	1.01
Min Dist. dal Mare	Angolo maxslope	0.356	0.351	7.46E+01	-2.46E-01	1.24E+00	1.04	1.04
Latitudine	Openness	0.345	0.339	7.48E+02	-7.32E-05	-2.21E+02	1.03	1.03
Distanza maxslope	Openness	0.342	0.336	3.79E+02	-7.40E-04	-1.95E+02	1.54	1.54
Pendenza	Angolo maxslope	0.314	0.309	6.78E+01	-3.47E-01	1.49E+00	1.16	1.16
Min Dist. dal Mare	Distanza maxslope	0.269	0.263	9.82E+01	-2.89E-01	-2.01E-03	1.02	1.02
Angolo picco	Distanza maxslope	0.268	0.262	7.84E+01	1.09E+00	-1.60E-03	1.18	1.18

*Figura 87. Diagrammi diagnostici per regressione 24h con media degli estremi, 2 variabili, area Campania*



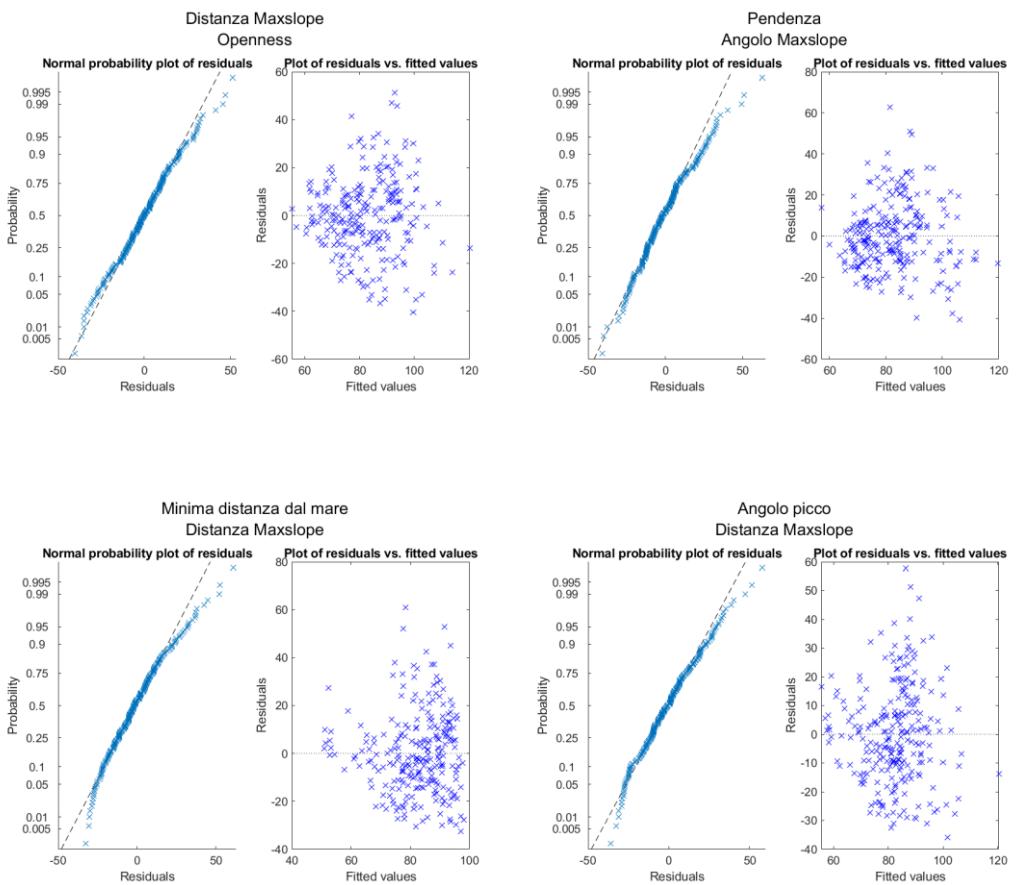
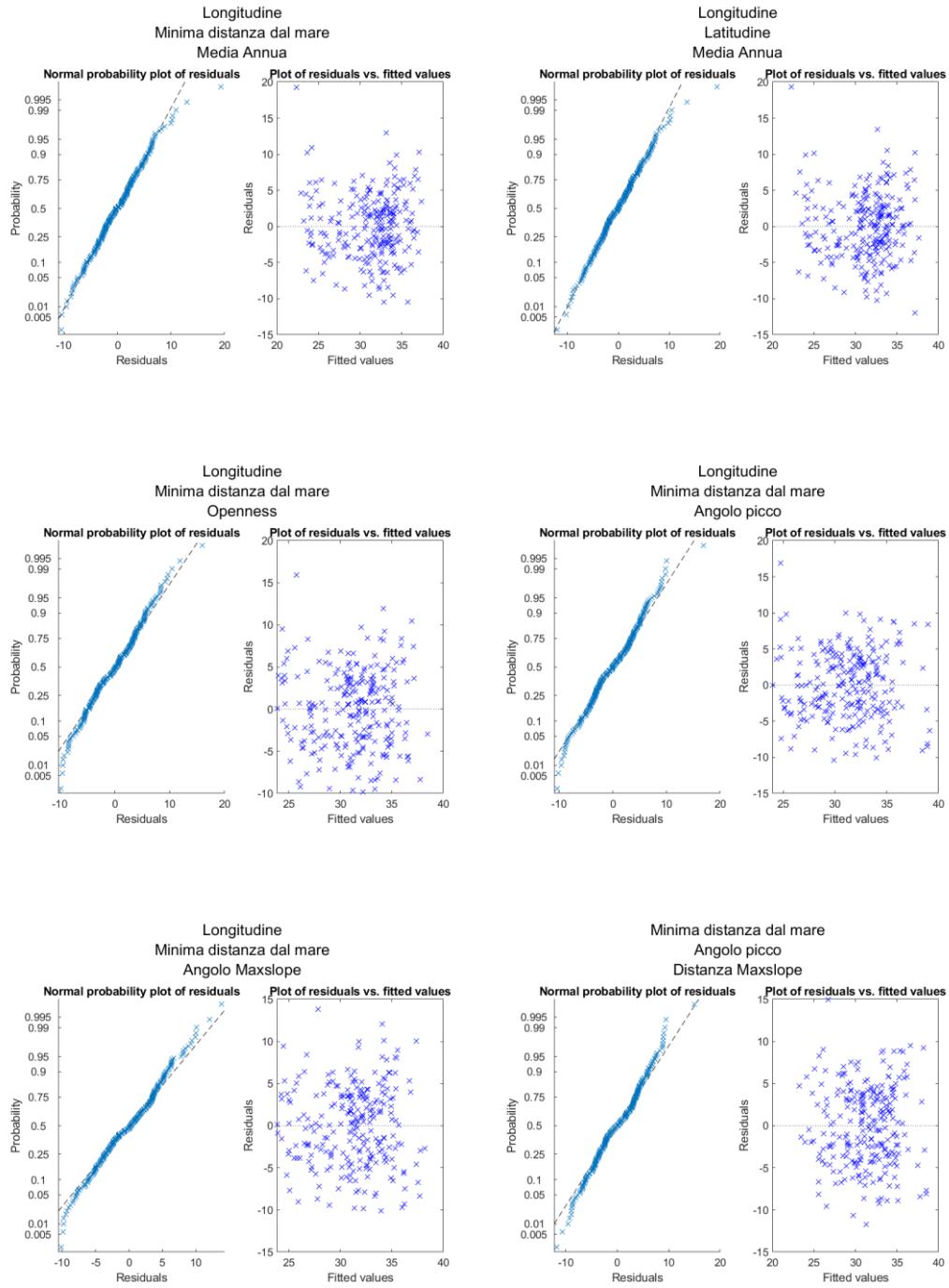


Tabella 86. Regressione 1h con media degli estremi, 3 variabili, area Campania.

	Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Longitudine	Min Dist. dal Mare	Media annua	0.383	0.375	5.49E+01	-3.12E-05	-9.25E-02	8.23E-03	1.08	1.24	1.22
Longitudine	Latitudine	Media annua	0.355	0.347	3.18E+02	-6.75E-05	-5.07E-05	8.95E-03	1.53	1.76	1.19
Longitudine	Min Dist. dal Mare	Openness	0.329	0.321	1.02E+02	-2.47E-05	-1.28E-01	2.86E+01	1.05	1.05	1.03
Longitudine	Min Dist. dal Mare	Angolo picco	0.325	0.317	5.32E+01	-2.13E-05	-1.17E-01	2.49E-01	1.03	1.11	1.08
Longitudine	Min Dist. dal Mare	Angolo maxslope	0.322	0.313	5.67E+01	-2.44E-05	-1.21E-01	1.70E-01	1.05	1.08	1.06
Min Dist. dal Mare	Angolo picco	Distanza maxslope	0.319	0.311	3.36E+01	-1.23E-01	1.94E-01	-1.88E-04	1.08	1.25	1.18
Longitudine	Quota	Media annua	0.319	0.311	5.20E+01	-3.37E-05	-3.34E-03	1.17E-02	1.18	1.21	1.05
Min Dist. dal Mare	Angolo picco	Openness	0.316	0.308	5.67E+01	-1.27E-01	1.56E-01	1.55E+01	1.09	1.74	1.63
Longitudine	Min Dist. dal Mare	Distanza maxslope	0.307	0.299	5.59E+01	-2.02E-05	-1.28E-01	-2.93E-04	1.03	1.05	1.02
Latitudine	Quota	Min Dist. dal Mare	0.306	0.297	-1.77E+02	4.69E-05	4.15E-03	-2.24E-01	1.97	1.39	2.45

Figura 88. Diagrammi diagnostici per regressione 1h con media degli estremi, 3 variabili, area Campania



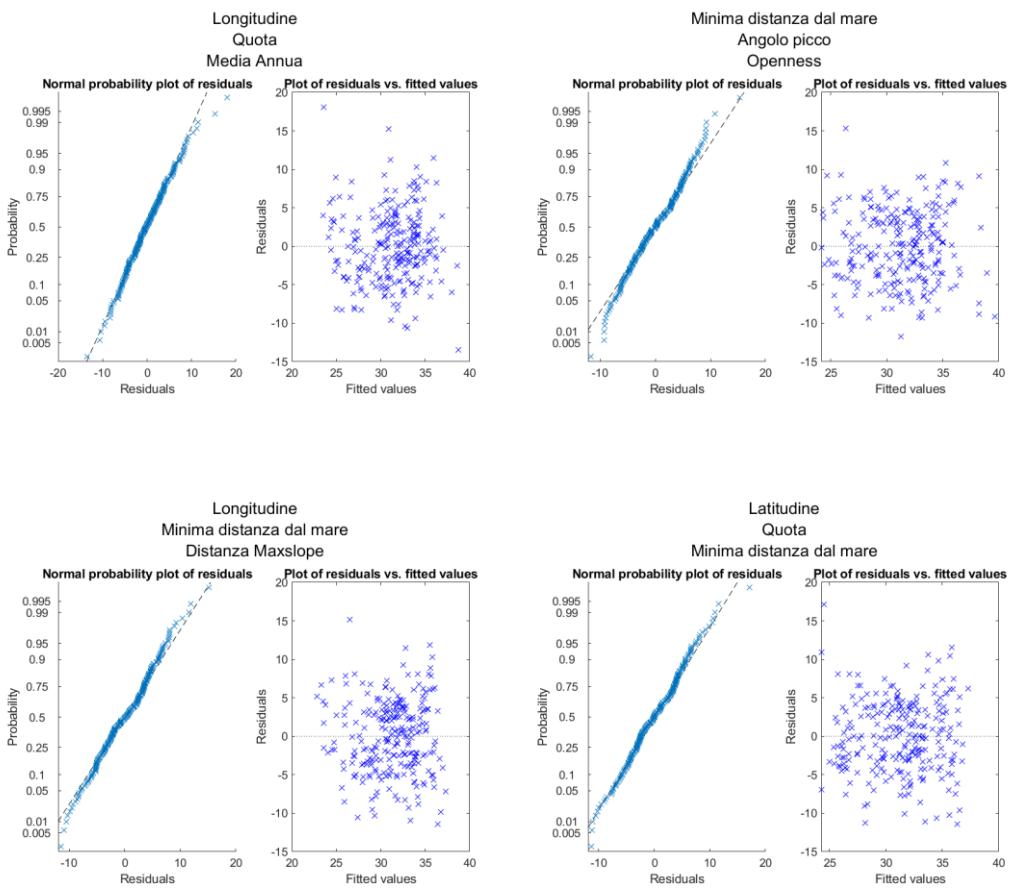
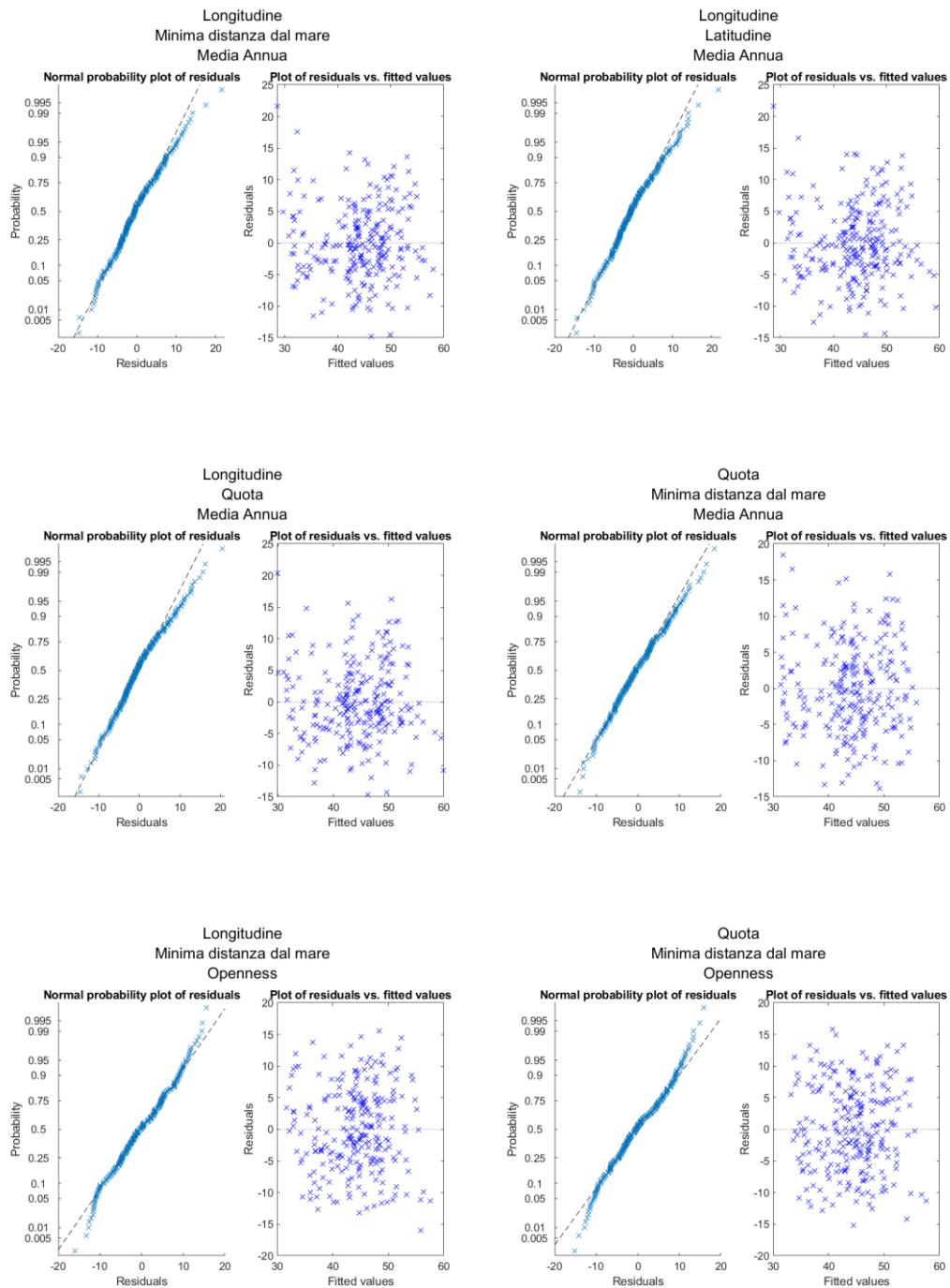


Tabella 87. Regressione 3h con media degli estremi, 3 variabili, area Campania.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3	
Longitudine	Min Dist. dal Mare	Media annua	0.539	0.533	8.10E+01	-5.74E-05	-1.00E-01	1.93E-02	1.08	1.24	1.22	
Longitudine	Latitudine	Media annua	0.520	0.514	3.44E+02	-9.46E-05	-5.06E-05	2.03E-02	1.53	1.76	1.19	
Longitudine	Quota	Media annua	0.514	0.508	7.50E+01	-5.70E-05	-4.84E-03	2.33E-02	1.18	1.21	1.05	
Quota	Min Dist. dal Mare	Media annua	0.487	0.481	2.59E+01	-3.90E-03	-9.68E-02	1.91E-02	1.60	1.77	1.49	
Longitudine	Min Dist. dal Mare	Openness	0.407	0.399	1.91E+02	-4.21E-05	-1.83E-01	-	6.63E+01	1.05	1.05	1.03
Quota	Min Dist. dal Mare	Openness	0.387	0.379	1.41E+02	4.22E-03	-2.24E-01	-	6.08E+01	1.26	1.27	1.01
Longitudine	Min Dist. dal Mare	Angolo maxslope	0.382	0.374	8.51E+01	-4.12E-05	-1.69E-01	3.82E-01	1.05	1.08	1.06	
Longitudine	Latitudine	Openness	0.358	0.351	7.37E+02	-1.15E-04	-1.05E-04	-	6.79E+01	1.51	1.53	1.03
Min Dist. dal Mare	Angolo picco	Distanza maxslope	0.343	0.335	4.87E+01	-1.80E-01	2.61E-01	-4.73E-04	1.08	1.25	1.18	
Longitudine	Min Dist. dal Mare	Distanza maxslope	0.339	0.331	8.29E+01	-3.15E-05	-1.86E-01	-6.15E-04	1.03	1.05	1.02	

Figura 89. Diagrammi diagnostici per regressione 3h con media degli estremi, 3 variabili, area Campania



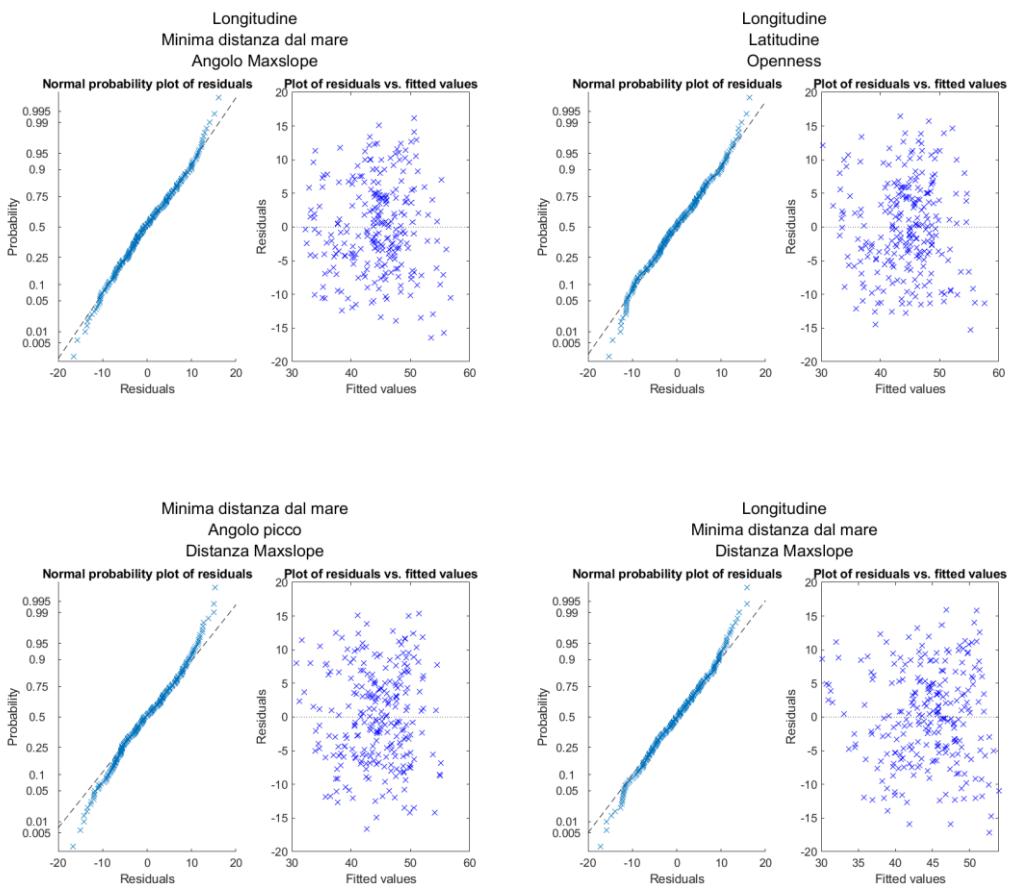
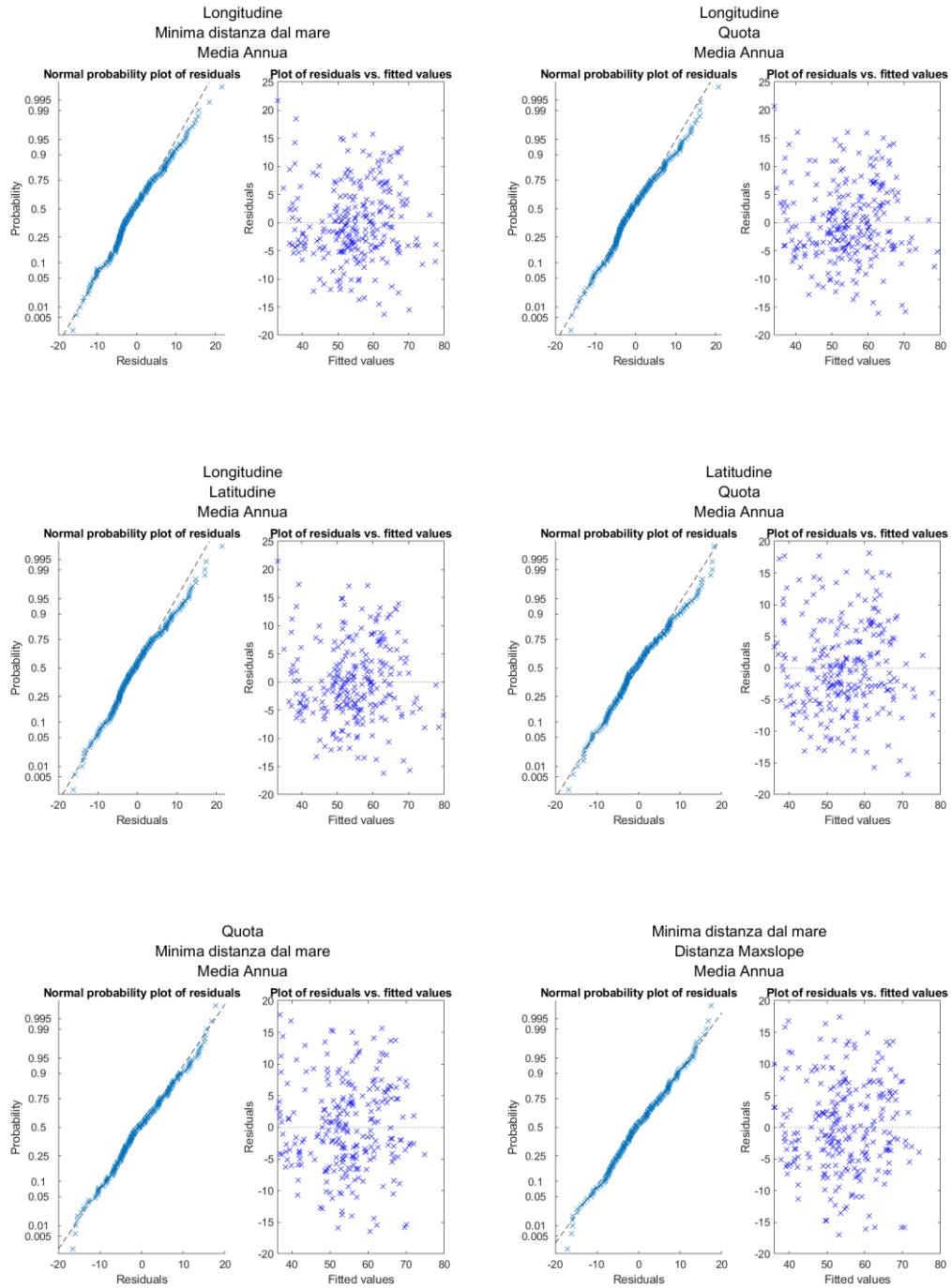


Tabella 88. Regressione 6h con media degli estremi, 3 variabili, area Campania.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Longitudine	Min Dist. dal Mare	Media annua	0.651	0.647	8.94E+01	-7.10E-05	-8.28E-02	3.20E-02	1.08	1.24	1.22
Longitudine	Quota	Media annua	0.647	0.642	8.16E+01	-6.77E-05	-5.18E-03	3.55E-02	1.18	1.21	1.05
Longitudine	Latitudine	Media annua	0.641	0.637	2.71E+02	-9.81E-05	-3.48E-05	3.31E-02	1.53	1.76	1.19
Latitudine	Quota	Media annua	0.619	0.614	-1.94E+02	4.58E-05	-9.84E-03	3.76E-02	1.21	1.09	1.26
Quota	Min Dist. dal Mare	Media annua	0.610	0.606	2.08E+01	-5.94E-03	-6.92E-02	3.23E-02	1.60	1.77	1.49
Min Dist. dal Mare	Distanza maxslope	Media annua	0.605	0.600	2.65E+01	-1.20E-01	-2.75E-04	2.77E-02	1.16	1.23	1.41
Pendenza	Distanza maxslope	Media annua	0.578	0.573	2.01E+01	-1.55E-01	-3.27E-04	3.15E-02	1.07	1.28	1.24
Quota	Min Dist. dal Mare	Openness	0.427	0.420	2.06E+02	7.82E-03	-2.86E-01	-9.73E+01	1.26	1.27	1.01
Longitudine	Min Dist. dal Mare	Openness	0.422	0.415	2.61E+02	-4.46E-05	-2.22E-01	-1.04E+02	1.05	1.05	1.03
Min Dist. dal Mare	Distanza maxslope	Openness	0.410	0.402	1.88E+02	-2.32E-01	-3.62E-04	-8.31E+01	1.02	1.56	1.54

Figura 90. Diagrammi diagnostici per regressione 6h con media degli estremi, 3 variabili, area Campania



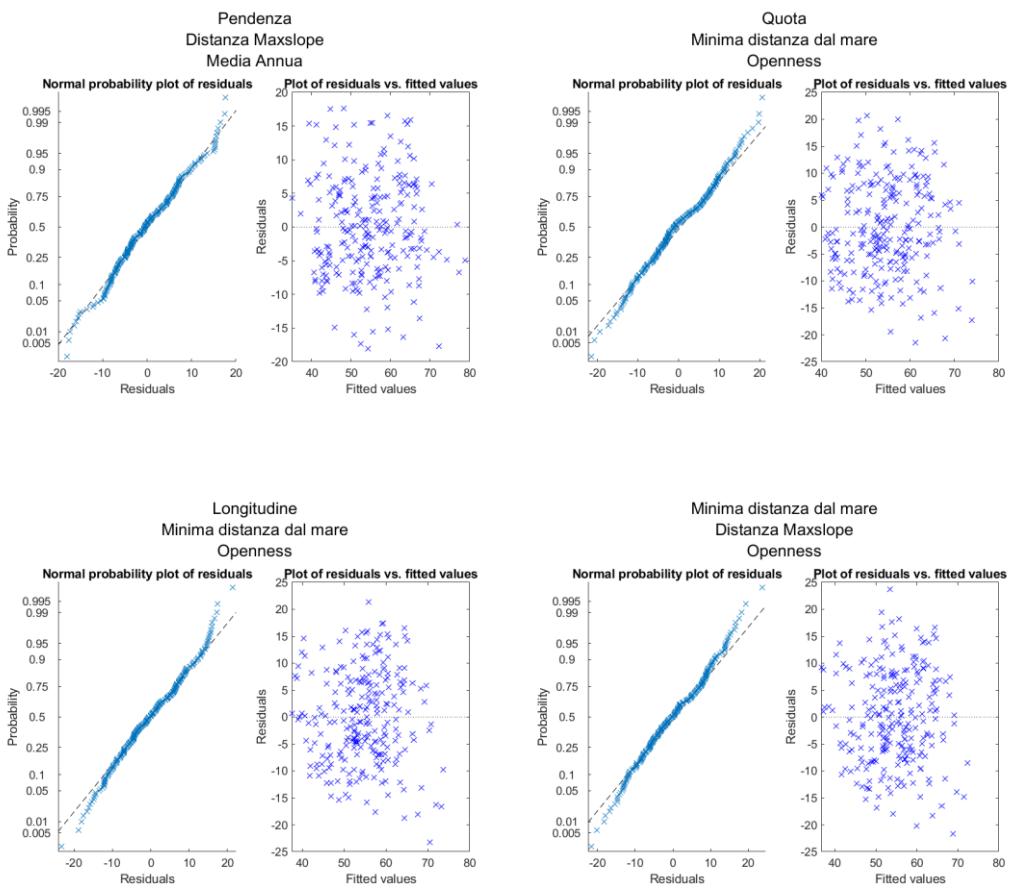
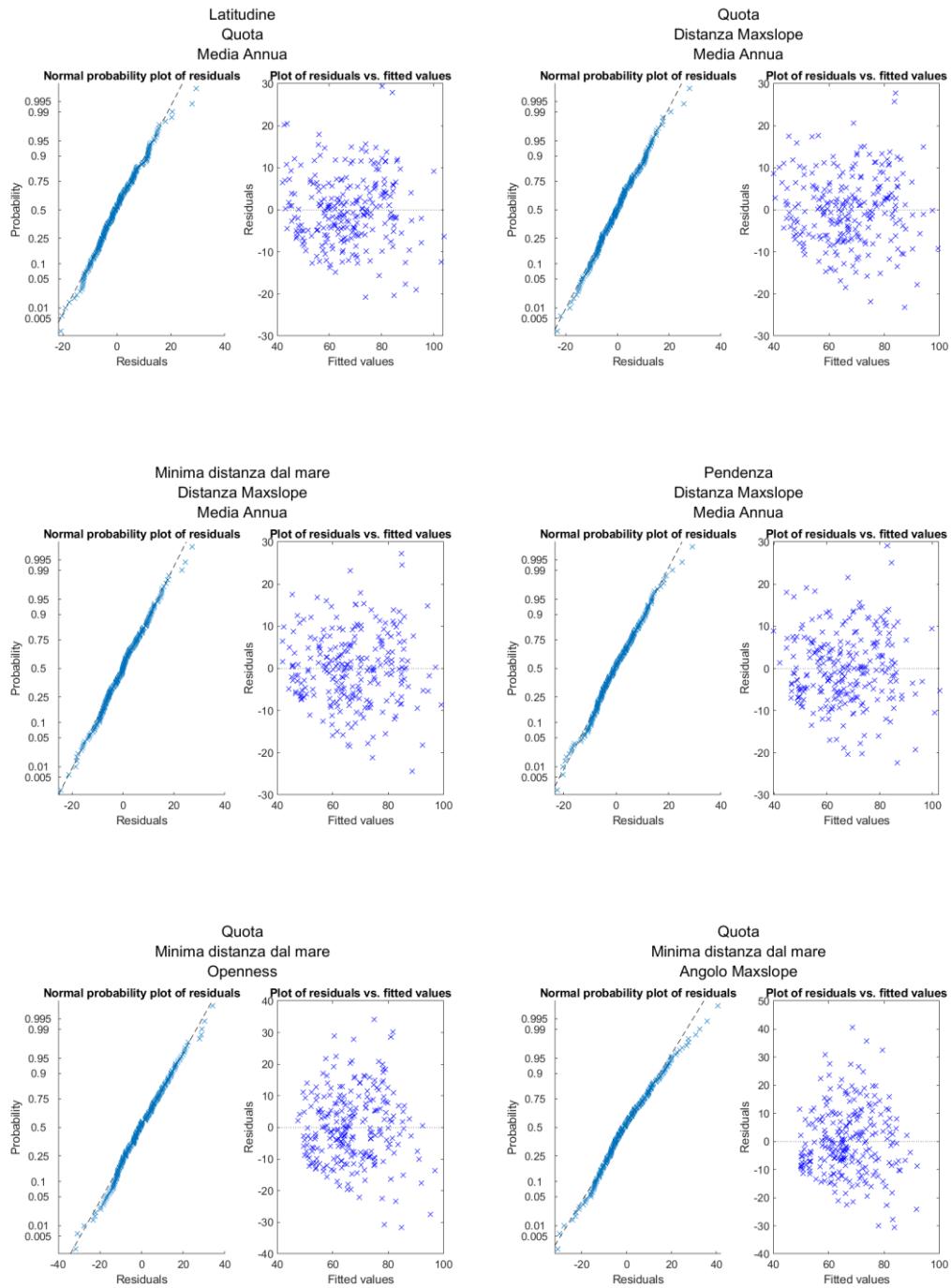


Tabella 89. Regressione 12h con media degli estremi, 3 variabili, area Campania.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Latitudine	Quota	Media annua	0.719	0.716	-2.86E+02	6.44E-05	-9.27E-03	5.44E-02	1.21	1.09	1.26
Quota	Distanza maxslope	Media annua	0.706	0.702	1.40E+01	-7.63E-03	-3.12E-04	4.86E-02	1.05	1.24	1.29
Min Dist. dal Mare	Distanza maxslope	Media annua	0.698	0.695	1.86E+01	-8.27E-02	-3.43E-04	4.43E-02	1.16	1.23	1.41
Pendenza	Distanza maxslope	Media annua	0.696	0.692	1.47E+01	-1.72E-01	-4.07E-04	4.71E-02	1.07	1.28	1.24
Quota	Min Dist. dal Mare	Openness	0.471	0.465	3.02E+02	1.44E-02	-3.57E-01	-1.53E+02	1.26	1.27	1.01
Quota	Min Dist. dal Mare	Angolo maxslope	0.399	0.392	6.16E+01	1.21E-02	-3.15E-01	8.24E-01	1.28	1.33	1.07
Longitudine	Latitudine	Openness	0.392	0.384	1.09E+03	-1.34E-04	-1.41E-04	-1.64E+02	1.51	1.53	1.03
Min Dist. dal Mare	Angolo maxslope	Distanza maxslope	0.379	0.371	6.77E+01	-2.34E-01	6.95E-01	-6.18E-04	1.04	1.68	1.65
Pendenza	Min Dist. dal Mare	Angolo maxslope	0.375	0.368	6.38E+01	-2.27E-01	-2.28E-01	9.70E-01	1.17	1.05	1.22
Quota	Min Dist. dal Mare	Distanza maxslope	0.342	0.334	7.71E+01	1.31E-02	-3.49E-01	-1.37E-03	1.28	1.30	1.04

*Figura 91. Diagrammi diagnostici per regressione 12h con media degli estremi, 3 variabili, area Campania*



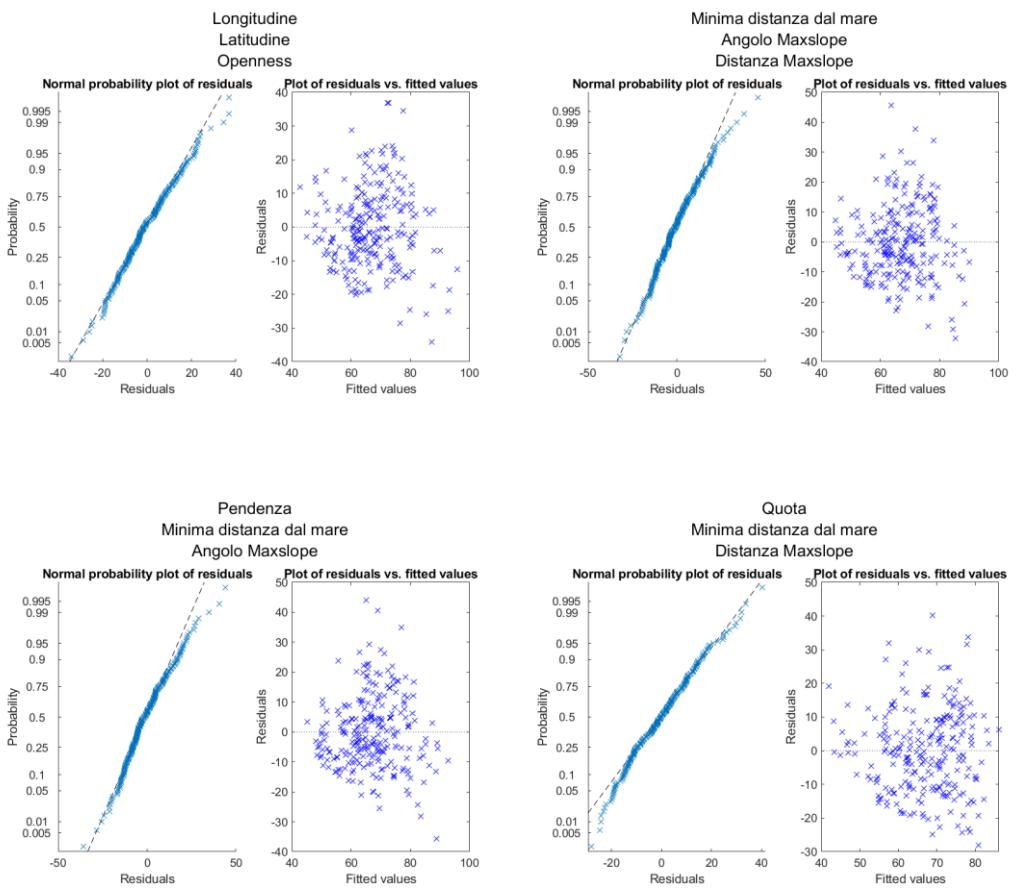
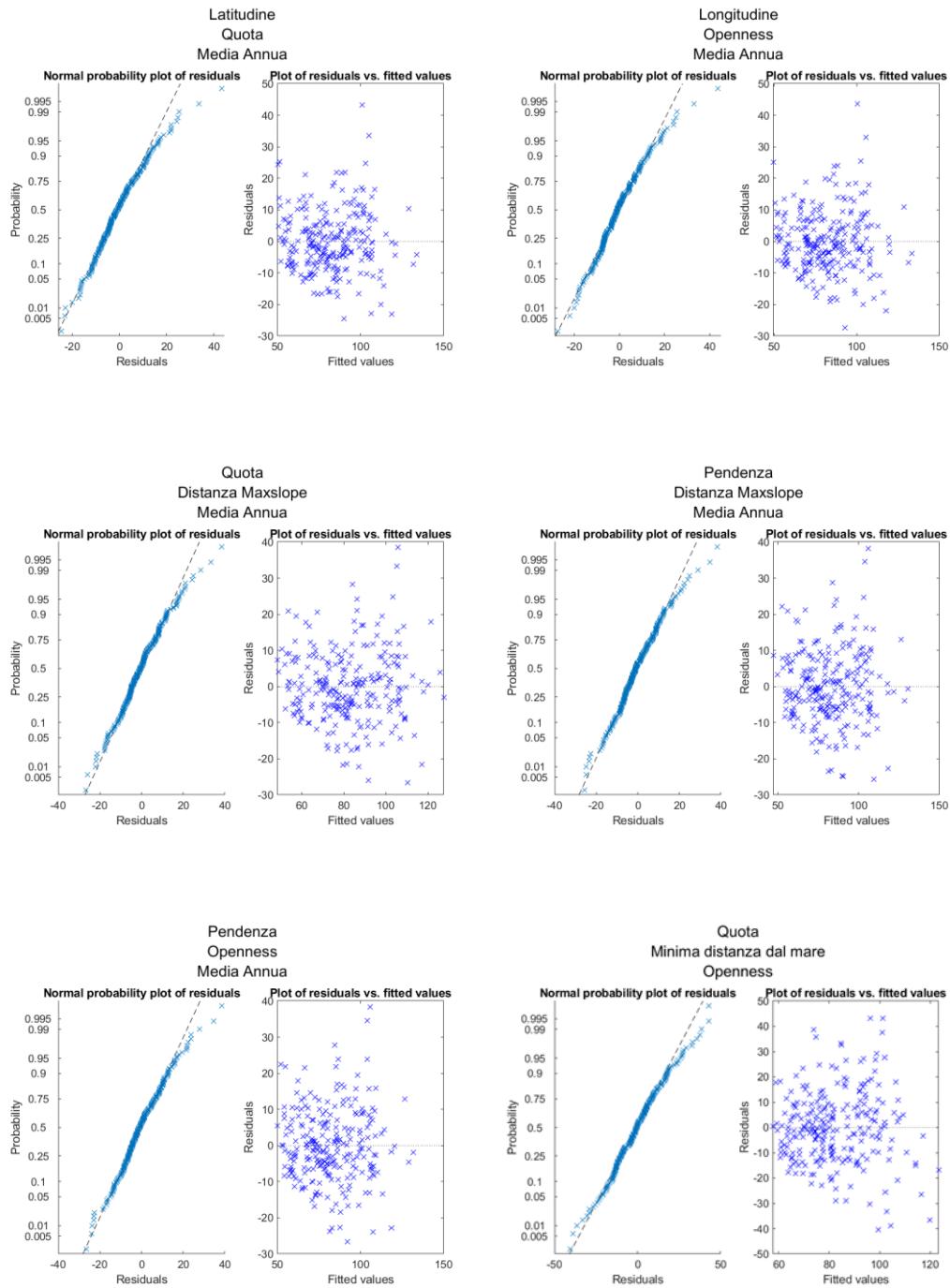
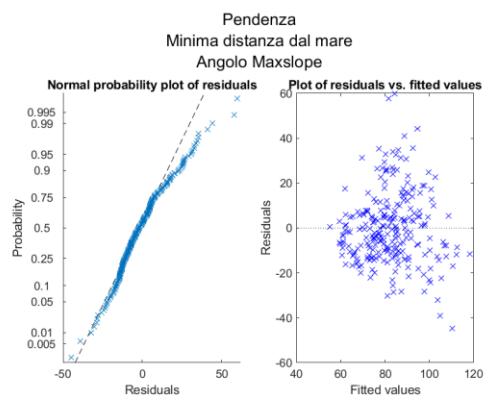
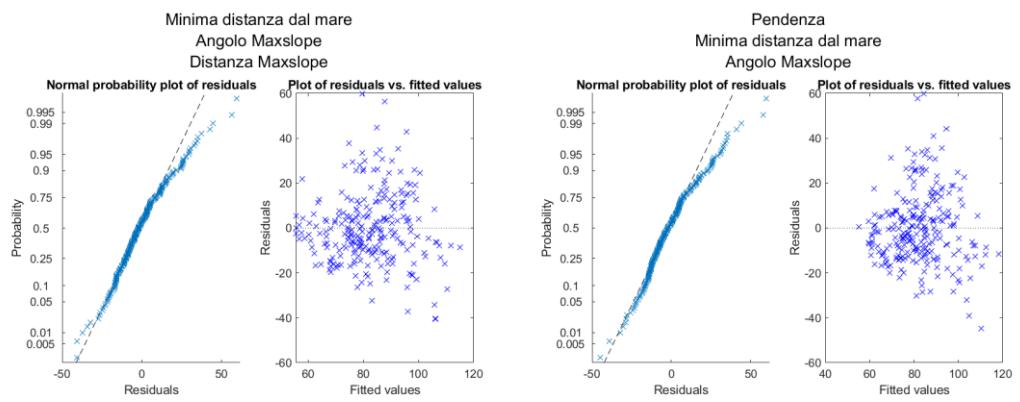
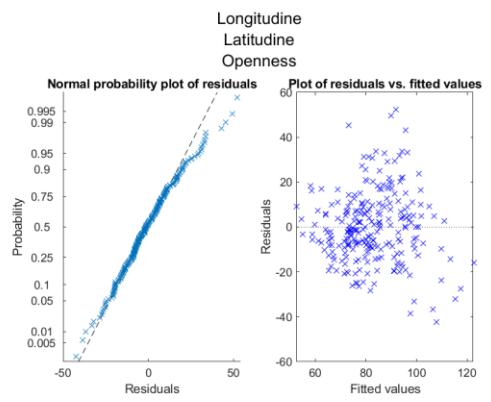
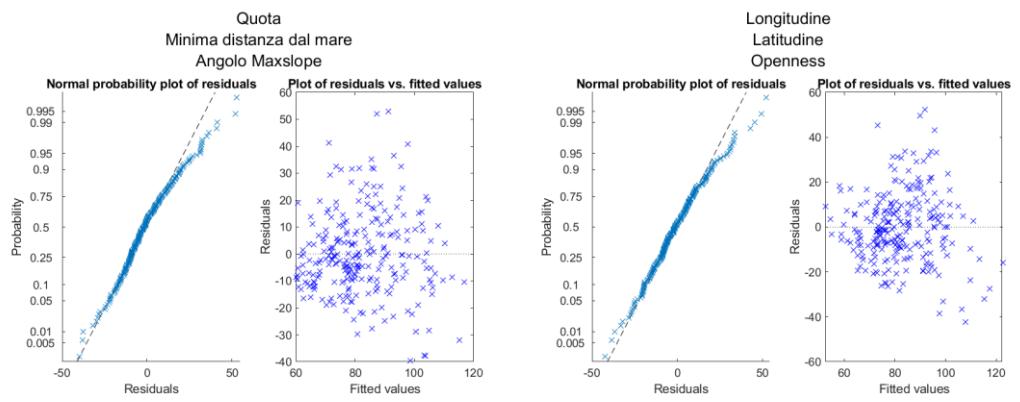


Tabella 90. Regressione 24h con media degli estremi, 3 variabili, area Campania.

Variabili			R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>	β <sub>3</sub>	VIF 1	VIF 2	VIF 3
Latitudine	Quota	Media annua	0.759	0.756	-3.83E+02	8.44E-05	-8.23E-03	7.25E-02	1.21	1.09	1.26
Longitudine	Openness	Media annua	0.758	0.756	1.31E+02	-7.71E-05	-3.13E+01	6.40E-02	1.02	1.62	1.63
Quota	Distanza maxslope	Media annua	0.745	0.741	9.58E+00	-6.10E-03	-3.64E-04	6.52E-02	1.05	1.24	1.29
Pendenza	Distanza maxslope	Media annua	0.743	0.740	1.05E+01	-1.84E-01	-4.60E-04	6.41E-02	1.07	1.28	1.24
Pendenza	Openness	Media annua	0.742	0.738	6.36E+01	-1.79E-01	-3.55E+01	6.28E-02	1.07	1.68	1.62
Quota	Min Dist. dal Mare	Openness	0.480	0.474	4.05E+02	2.16E-02	-4.25E-01	-2.12E+02	1.26	1.27	1.01
Quota	Min Dist. dal Mare	Angolo maxslope	0.403	0.396	7.22E+01	1.83E-02	-3.64E-01	1.15E+00	1.28	1.33	1.07
Longitudine	Latitudine	Openness	0.387	0.379	1.25E+03	-1.30E-04	-1.55E-04	-2.23E+02	1.51	1.53	1.03
Min Dist. dal Mare	Angolo maxslope	Distanza maxslope	0.368	0.361	8.00E+01	-2.43E-01	1.02E+00	-7.29E-04	1.04	1.68	1.65
Pendenza	Min Dist. dal Mare	Angolo maxslope	0.367	0.359	7.54E+01	-2.86E-01	-2.35E-01	1.35E+00	1.17	1.05	1.22

*Figura 92. Diagrammi diagnostici per regressione 24h con media degli estremi, 3 variabili, area Campania*





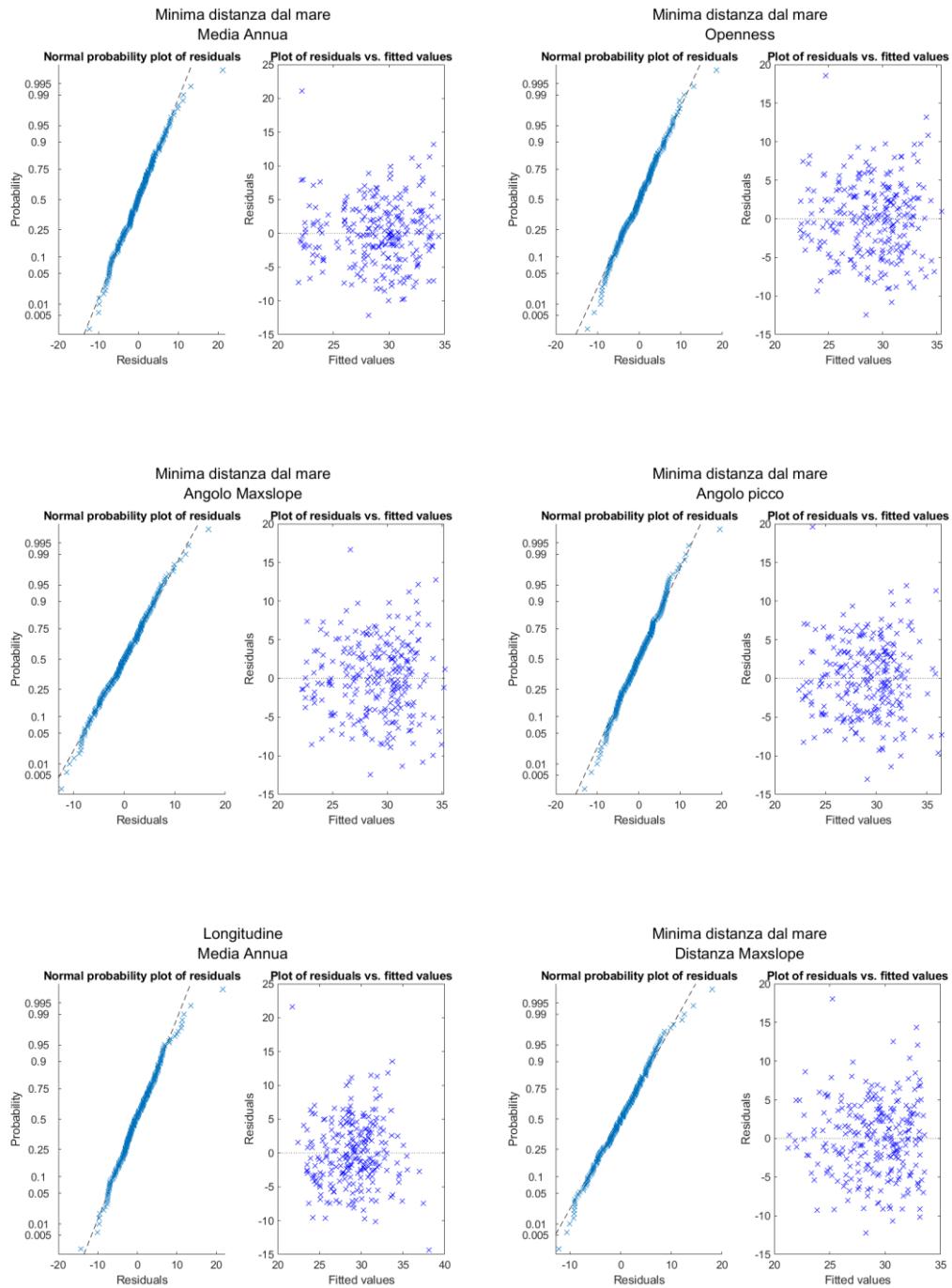
## ***Regressioni con la mediana delle precipitazioni estreme alle durate di 1 h, 3 h, 6 h, 12 h e 24 h***

Nelle seguenti tabelle sono riportati i risultati ottenuti dai dieci migliori modelli regressivi tra la mediana degli estremi per durate sub-giornaliere e classi di 2 e 3 variabili indipendenti per l'area Campania. Per ognuno dei modelli, inoltre, si riportano i diagrammi diagnostici corrispondenti.

*Tabella 91. Regressione 1h con mediana degli estremi, 2 variabili, area Campania.*

<b>Variabili</b>		<b>R<sup>2</sup></b>	<b>R<sup>2</sup><sub>adj</sub></b>	<b>β<sub>0</sub></b>	<b>β<sub>1</sub></b>	<b>β<sub>2</sub></b>
Minima distanza dal mare	Media Annua	0.319	0.314	2.40E+01	-1.06E-01	6.76E-03
Minima distanza dal mare	Openness	0.287	0.281	7.09E+01	-1.32E-01	-2.54E+01
Minima distanza dal mare	Angolo Maxslope	0.283	0.277	3.07E+01	-1.26E-01	1.54E-01
Minima distanza dal mare	Angolo picco	0.281	0.276	3.03E+01	-1.22E-01	2.18E-01
Longitudine	Media Annua	0.279	0.274	5.76E+01	-4.16E-05	1.06E-02
Minima distanza dal mare	Distanza Maxslope	0.270	0.264	3.37E+01	-1.31E-01	-2.66E-04
Longitudine	Minima distanza dal mare	0.255	0.249	5.25E+01	-2.01E-05	-1.32E-01
Quota	Media Annua	0.253	0.247	1.80E+01	-4.91E-03	1.09E-02
Longitudine	Latitudine	0.199	0.192	4.46E+02	-7.29E-05	-7.61E-05
Longitudine	Angolo picco	0.157	0.150	5.71E+01	-3.17E-05	3.31E-01

*Figura 93. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 2 variabili, area Campania*



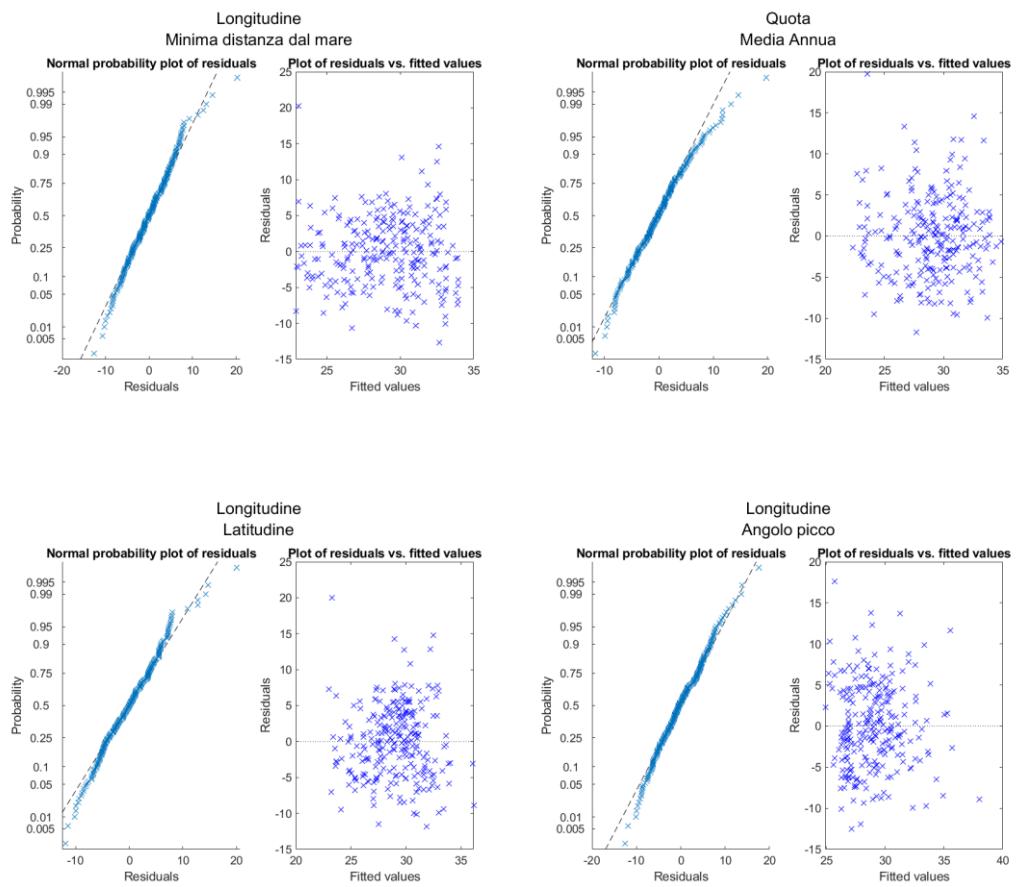
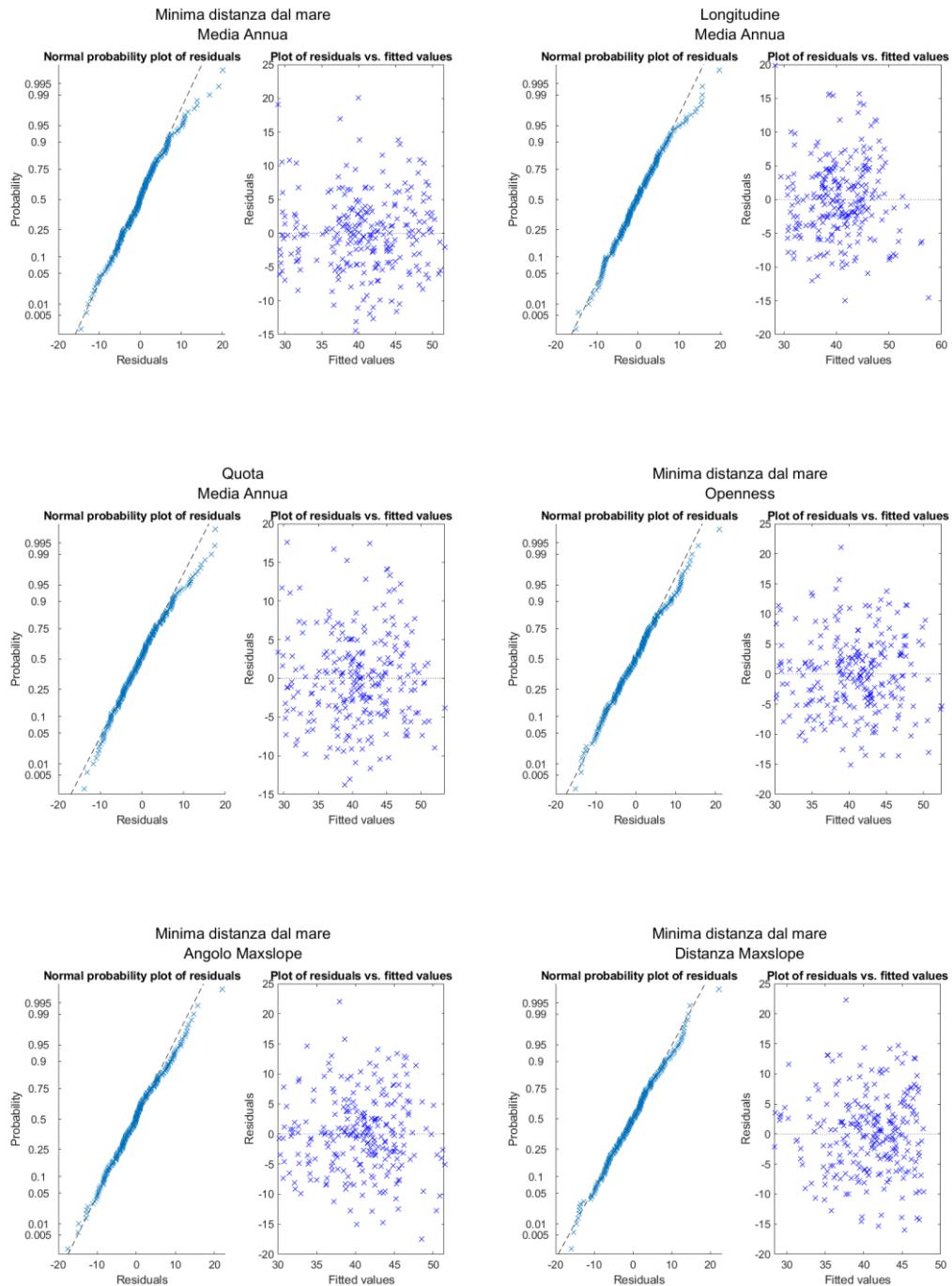


Tabella 92. Regressione 3h con mediana degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Minima distanza dal mare	Media Annua	0.498	0.494	2.49E+01	-1.22E-01	1.64E-02
Longitudine	Media Annua	0.479	0.474	6.68E+01	-5.13E-05	2.09E-02
Quota	Media Annua	0.461	0.457	1.81E+01	-6.29E-03	2.13E-02
Minima distanza dal mare	Openness	0.382	0.377	1.32E+02	-1.88E-01	-5.72E+01
Minima distanza dal mare	Angolo Maxslope	0.357	0.352	4.18E+01	-1.76E-01	3.24E-01
Minima distanza dal mare	Distanza Maxslope	0.319	0.314	4.80E+01	-1.87E-01	-5.22E-04
Minima distanza dal mare	Angolo picco	0.308	0.303	4.25E+01	-1.76E-01	3.37E-01
Quota	Minima distanza dal mare	0.289	0.283	4.51E+01	6.07E-03	-2.38E-01
Longitudine	Angolo Maxslope	0.210	0.203	7.60E+01	-4.08E-05	4.30E-01
Longitudine	Openness	0.205	0.199	1.85E+02	-4.23E-05	-6.81E+01

*Figura 94. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 2 variabili, area Campania*



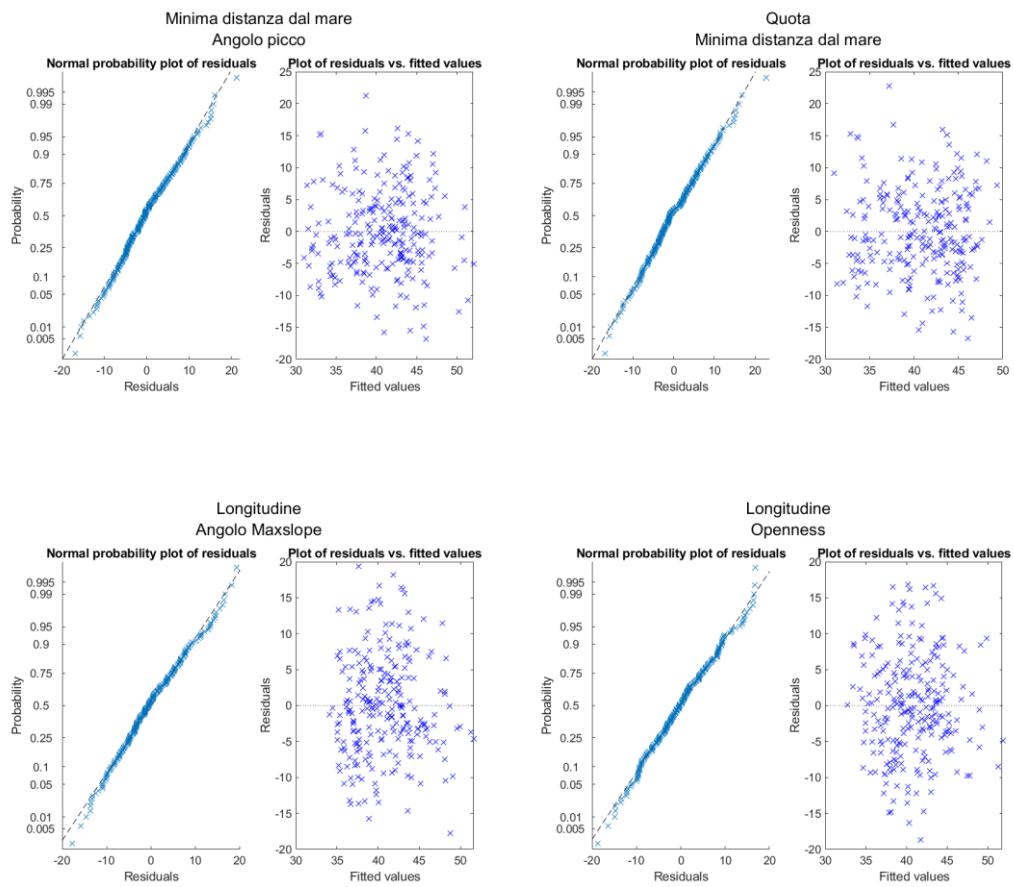
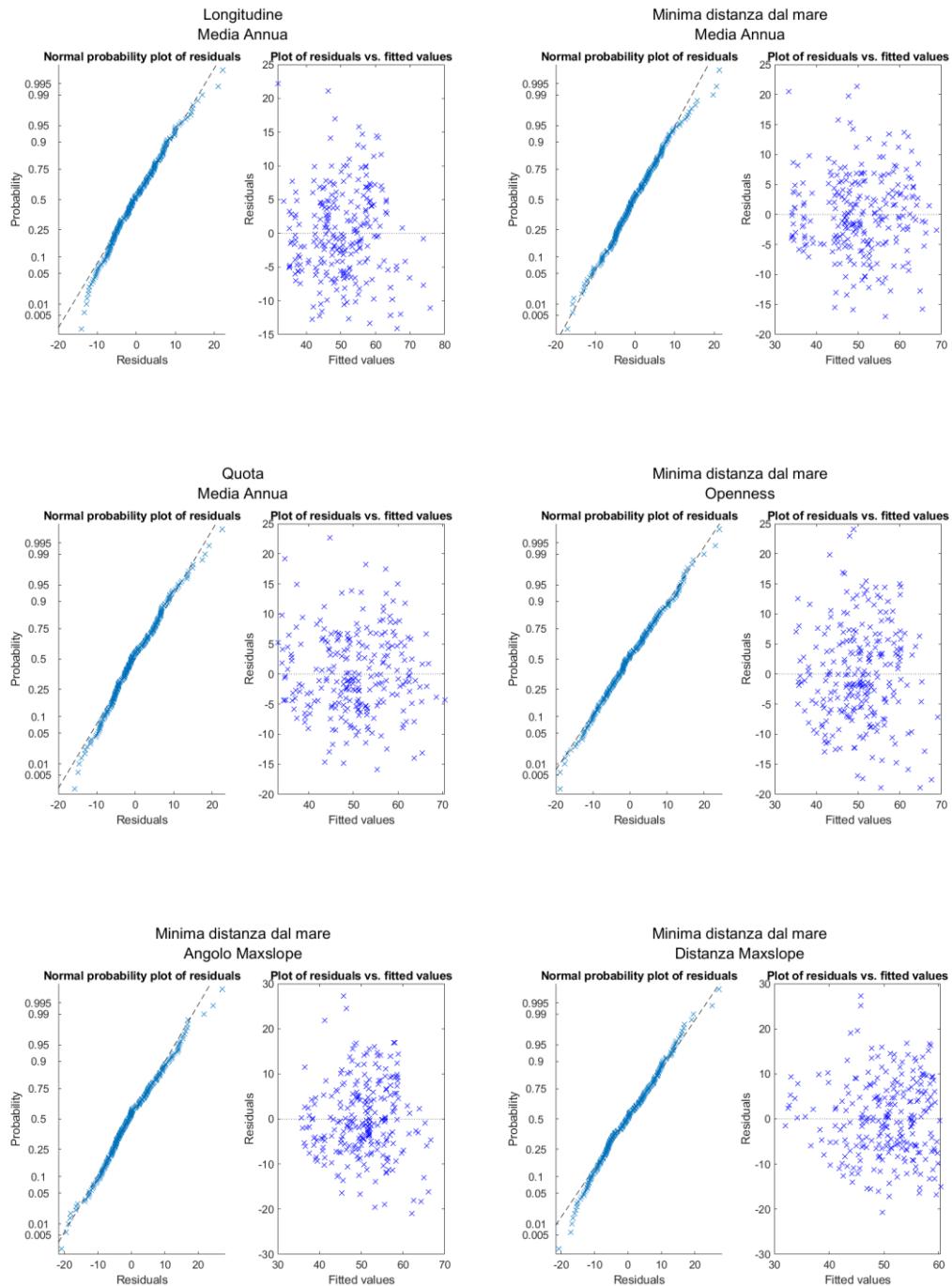


Tabella 93. Regressione 6h con mediana degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Longitudine	Media Annua	0.623	0.620	7.92E+01	-6.76E-05	3.23E-02
Minima distanza dal mare	Media Annua	0.618	0.615	2.23E+01	-1.34E-01	2.71E-02
Quota	Media Annua	0.605	0.602	1.49E+01	-8.18E-03	3.28E-02
Minima distanza dal mare	Openness	0.440	0.435	1.99E+02	-2.42E-01	-9.43E+01
Minima distanza dal mare	Angolo Maxslope	0.396	0.391	5.03E+01	-2.23E-01	5.26E-01
Minima distanza dal mare	Distanza Maxslope	0.354	0.349	6.05E+01	-2.40E-01	-9.08E-04
Minima distanza dal mare	Angolo picco	0.326	0.321	5.13E+01	-2.24E-01	5.51E-01
Quota	Minima distanza dal mare	0.292	0.286	5.58E+01	9.36E-03	-3.22E-01
Longitudine	Openness	0.274	0.268	2.67E+02	-5.42E-05	-1.08E+02
Latitudine	Openness	0.269	0.263	4.47E+02	-5.49E-05	-9.76E+01

*Figura 95. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 2 variabili, area Campania*



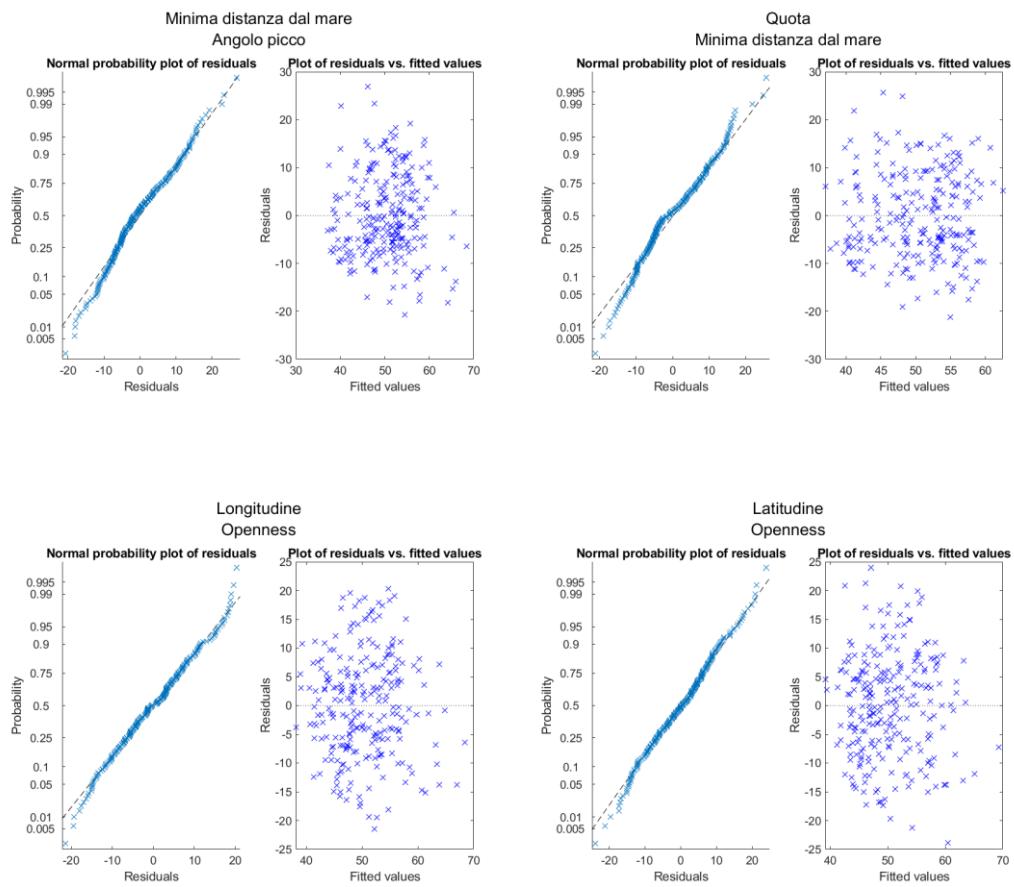
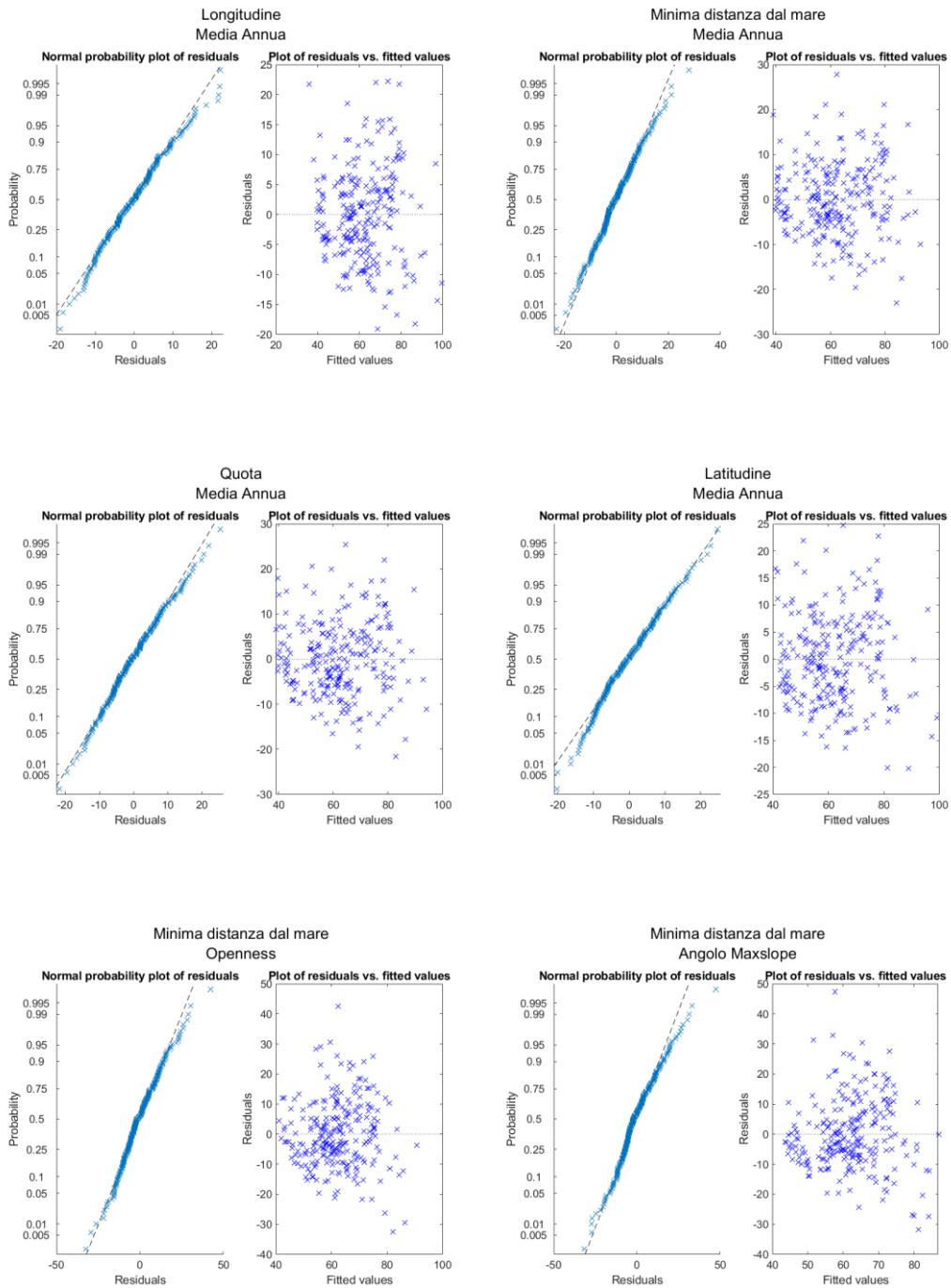


Tabella 94. Regressione 12h con mediana degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Longitudine	Media Annua	0.721	0.719	7.99E+01	-7.57E-05	4.85E-02
Minima distanza dal mare	Media Annua	0.698	0.696	1.32E+01	-1.00E-01	4.41E-02
Quota	Media Annua	0.696	0.693	7.71E+00	-6.40E-03	4.85E-02
Latitudine	Media Annua	0.688	0.686	-1.49E+02	3.40E-05	4.88E-02
Minima distanza dal mare	Openness	0.424	0.419	2.90E+02	-2.79E-01	-1.46E+02
Minima distanza dal mare	Angolo Maxslope	0.372	0.367	5.95E+01	-2.49E-01	8.20E-01
Minima distanza dal mare	Distanza Maxslope	0.310	0.304	7.52E+01	-2.76E-01	-1.37E-03
Latitudine	Openness	0.309	0.304	5.98E+02	-6.86E-05	-1.49E+02
Longitudine	Openness	0.303	0.298	3.60E+02	-5.53E-05	-1.62E+02
Distanza Maxslope	Openness	0.298	0.293	2.60E+02	-5.89E-04	-1.30E+02

*Figura 96. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 2 variabili, area Campania*



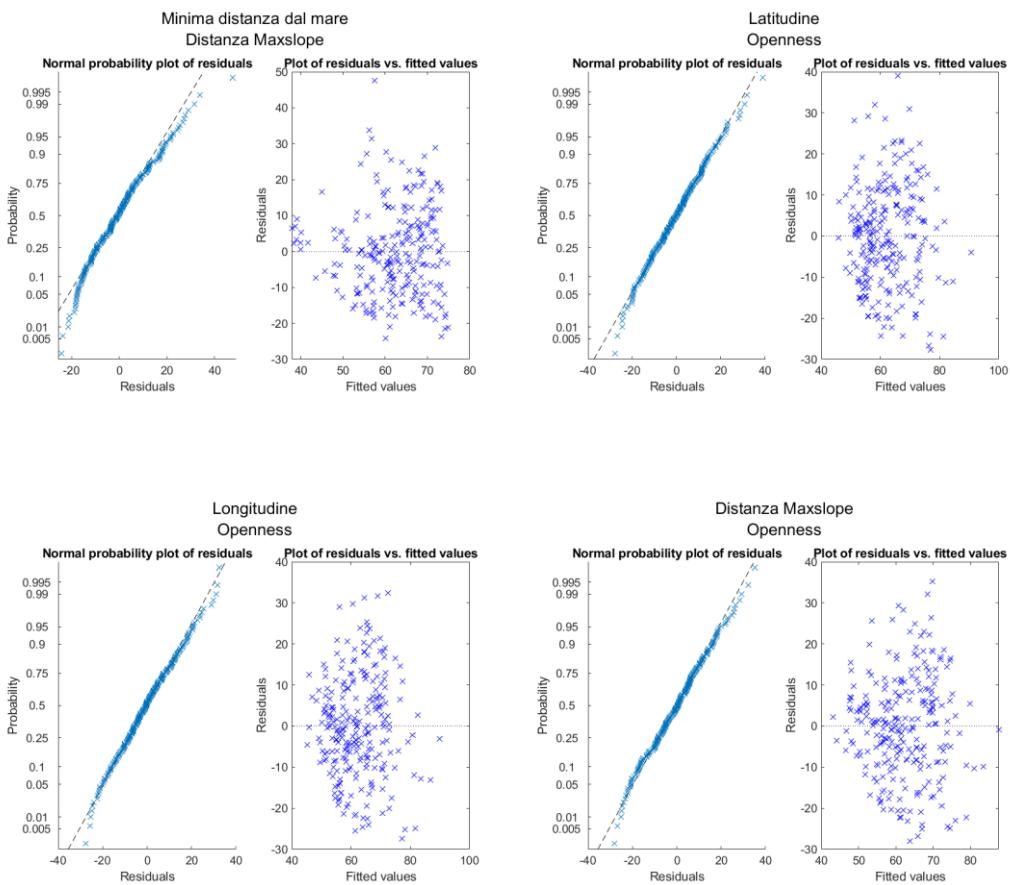
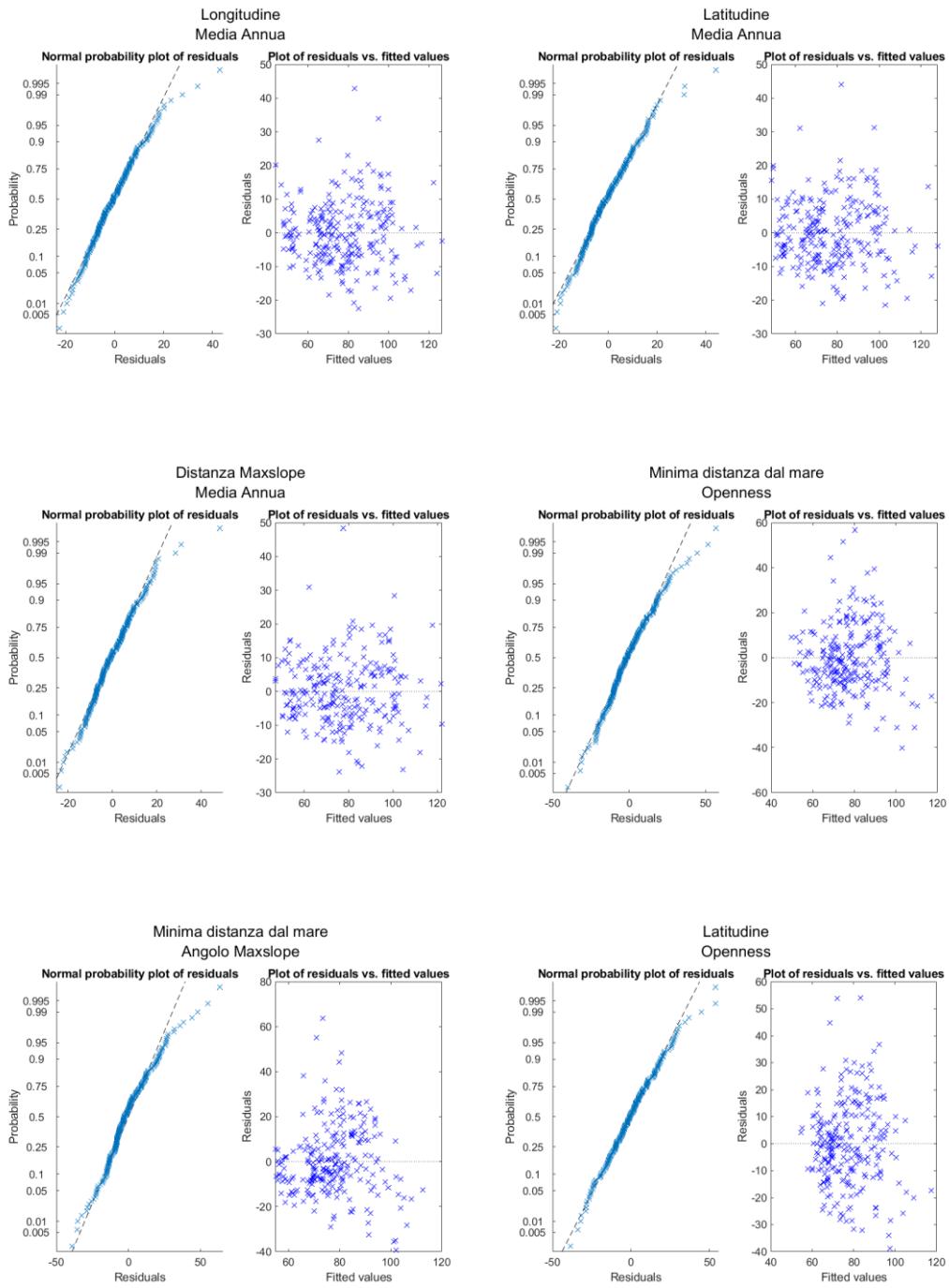


Tabella 95. Regressione 24h con mediana degli estremi, 2 variabili, area Campania.

Variabili		R <sup>2</sup>	R <sup>2</sup> <sub>adj</sub>	β <sub>0</sub>	β <sub>1</sub>	β <sub>2</sub>
Longitudine	Media Annua	0.756	0.754	7.09E+01	-7.09E-05	6.50E-02
Latitudine	Media Annua	0.745	0.743	-2.41E+02	5.29E-05	6.64E-02
Distanza Maxslope	Media Annua	0.742	0.740	7.48E+00	-4.17E-04	6.09E-02
Minima distanza dal mare	Openness	0.421	0.416	3.99E+02	-2.97E-01	-2.08E+02
Minima distanza dal mare	Angolo Maxslope	0.370	0.365	7.03E+01	-2.52E-01	1.20E+00
Latitudine	Openness	0.351	0.345	7.81E+02	-8.52E-05	-2.10E+02
Quota	Openness	0.343	0.338	4.04E+02	9.23E-03	-2.19E+02
Distanza Maxslope	Openness	0.343	0.337	3.56E+02	-7.88E-04	-1.83E+02
Latitudine	Angolo Maxslope	0.318	0.312	3.62E+02	-6.58E-05	1.25E+00
Pendenza	Angolo Maxslope	0.316	0.310	6.30E+01	-2.87E-01	1.43E+00

*Figura 97. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 2 variabili, area Campania*



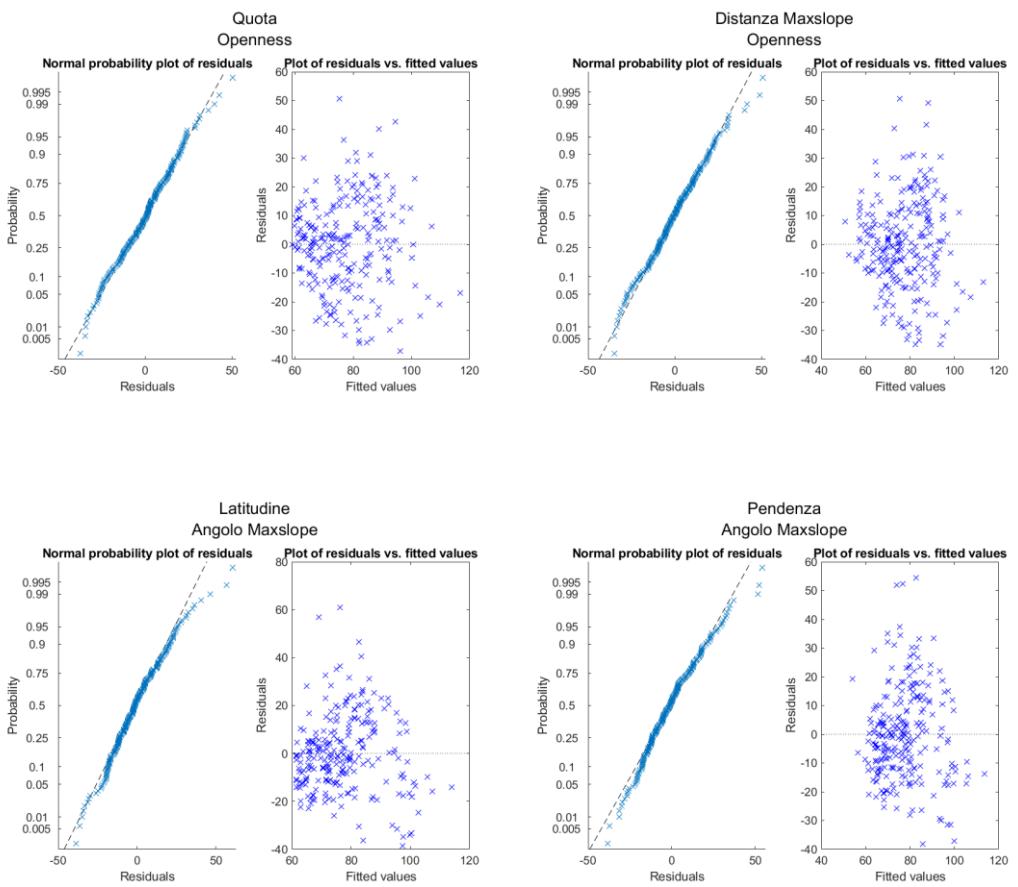
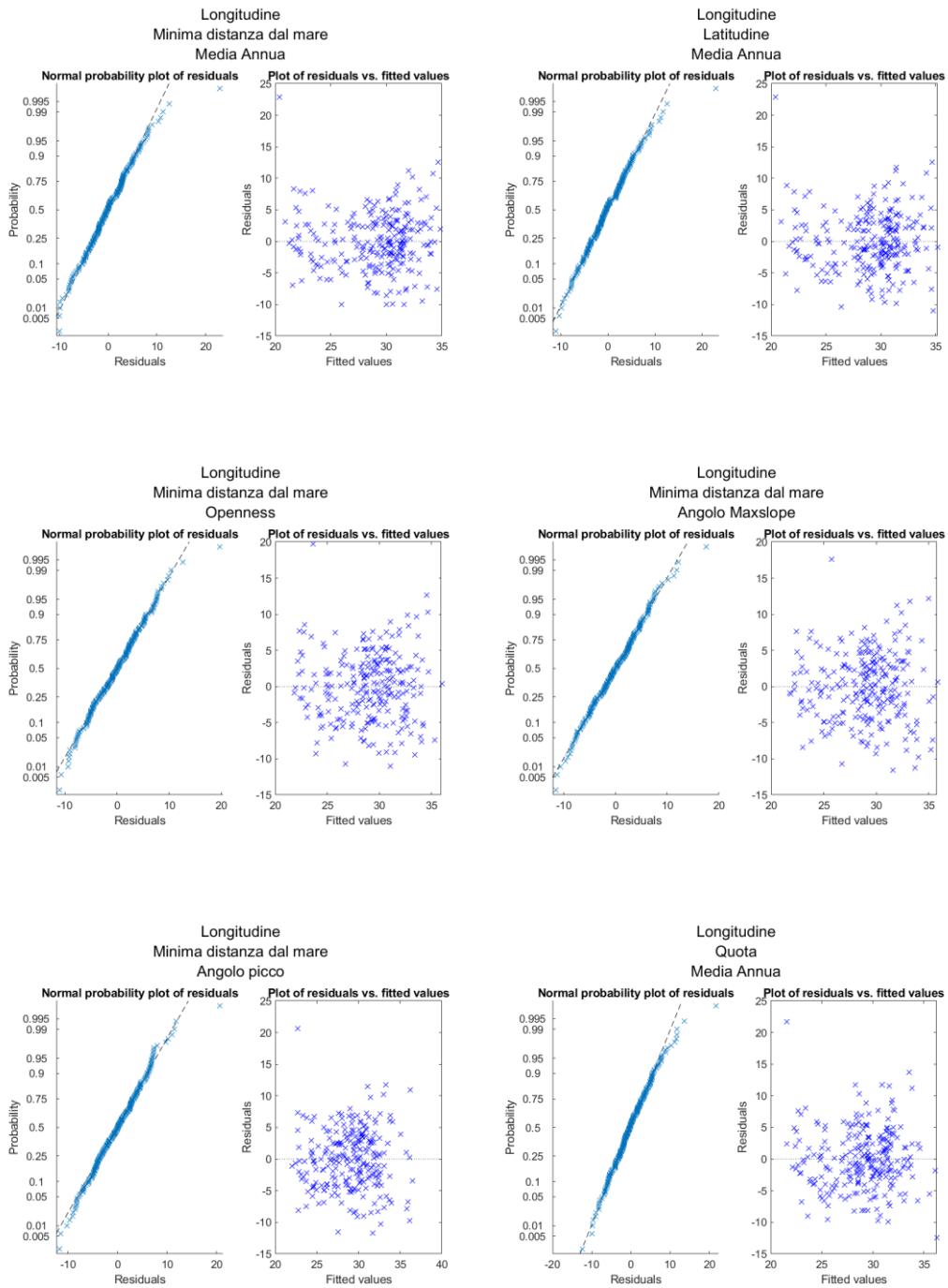


Tabella 96. Regressione 1h con mediana degli estremi, 3 variabili, area Campania.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.360	0.352	5.28E+01	-3.09E-05	-8.98E-02	7.83E-03
Longitudine	Latitudine	Media Annua	0.330	0.321	2.98E+02	-6.52E-05	-4.73E-05	8.62E-03
Longitudine	Minima distanza dal mare	Openness	0.314	0.306	9.90E+01	-2.49E-05	-1.23E-01	2.79E+01
Longitudine	Minima distanza dal mare	Angolo Maxslope	0.310	0.301	5.46E+01	-2.47E-05	-1.16E-01	1.70E-01
Longitudine	Minima distanza dal mare	Angolo picco	0.302	0.294	5.12E+01	-2.14E-05	-1.14E-01	2.24E-01
Longitudine	Quota	Media Annua	0.298	0.289	5.03E+01	-3.37E-05	-3.11E-03	1.12E-02
Latitudine	Quota	Minima distanza dal mare	0.297	0.288	-1.90E+02	4.92E-05	4.18E-03	-2.22E-01
Minima distanza dal mare	Angolo picco	Distanza Maxslope	0.294	0.285	3.14E+01	-1.20E-01	1.72E-01	-1.75E-04
Longitudine	Minima distanza dal mare	Distanza Maxslope	0.289	0.280	5.36E+01	-2.04E-05	-1.24E-01	-2.68E-04
Longitudine	Quota	Minima distanza dal mare	0.281	0.273	6.04E+01	-2.90E-05	4.04E-03	-1.53E-01

*Figura 98. Diagrammi diagnostici per regressione 1h con mediana degli estremi, 3 variabili, area Campania*



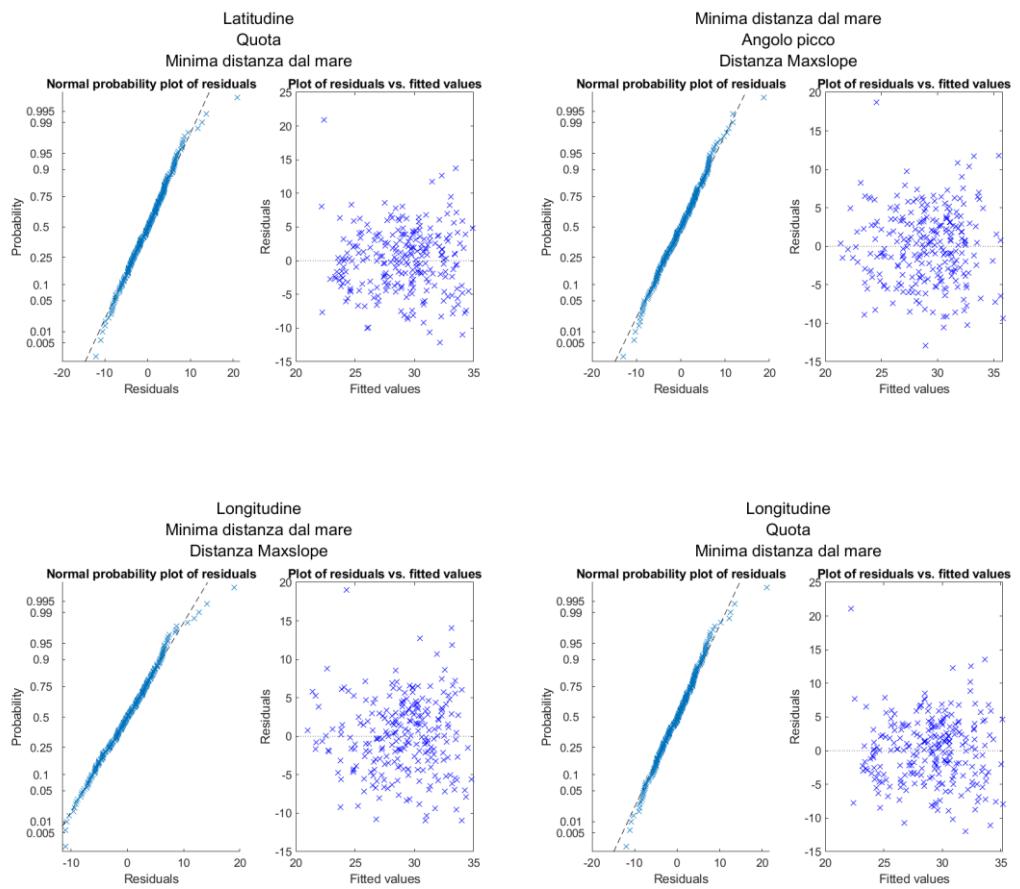
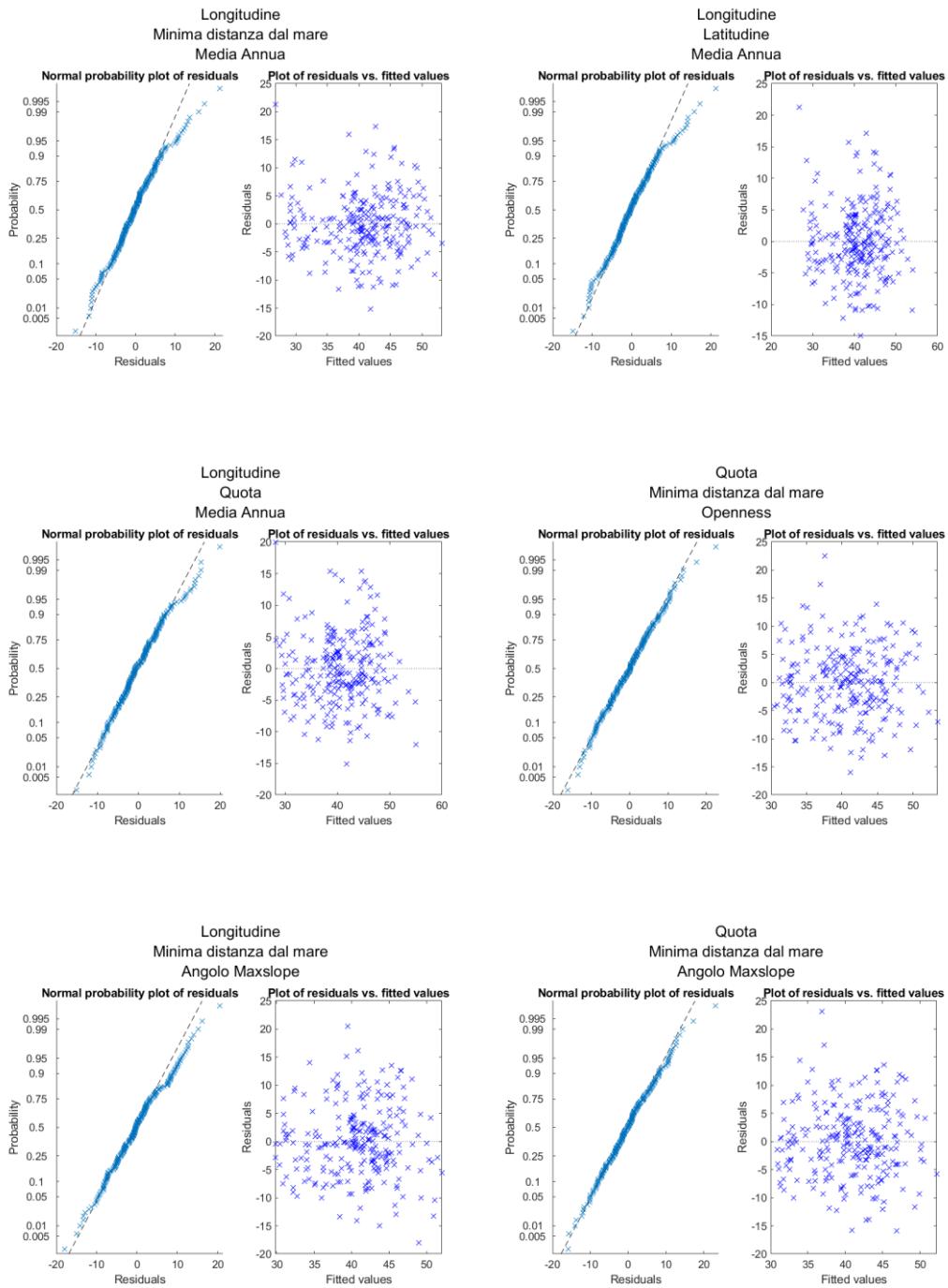


Tabella 97. Regressione 3h con mediana degli estremi, 3 variabili, area Campania.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.532	0.526	6.14E+01	-3.92E-05	-1.02E-01	1.77E-02
Longitudine	Latitudine	Media Annua	0.509	0.504	3.32E+02	-7.73E-05	-5.21E-05	1.87E-02
Longitudine	Quota	Media Annua	0.495	0.489	5.72E+01	-4.09E-05	-4.11E-03	2.16E-02
Quota	Minima distanza dal mare	Openness	0.409	0.402	1.29E+02	5.38E-03	-2.21E-01	5.56E+01
Longitudine	Minima distanza dal mare	Openness	0.396	0.389	1.60E+02	-2.49E-05	-1.79E-01	5.96E+01
Quota	Minima distanza dal mare	Angolo Maxslope	0.375	0.368	4.12E+01	4.52E-03	-2.05E-01	3.02E-01
Longitudine	Minima distanza dal mare	Angolo Maxslope	0.370	0.362	6.50E+01	-2.40E-05	-1.66E-01	3.39E-01
Longitudine	Latitudine	Openness	0.342	0.334	6.93E+02	-9.64E-05	-1.02E-04	6.12E+01
Quota	Minima distanza dal mare	Distanza Maxslope	0.341	0.333	4.68E+01	4.97E-03	-2.18E-01	-4.77E-04
Minima distanza dal mare	Angolo picco	Distanza Maxslope	0.341	0.333	4.49E+01	-1.73E-01	2.32E-01	-4.00E-04

*Figura 99. Diagrammi diagnostici per regressione 3h con mediana degli estremi, 3 variabili, area Campania*



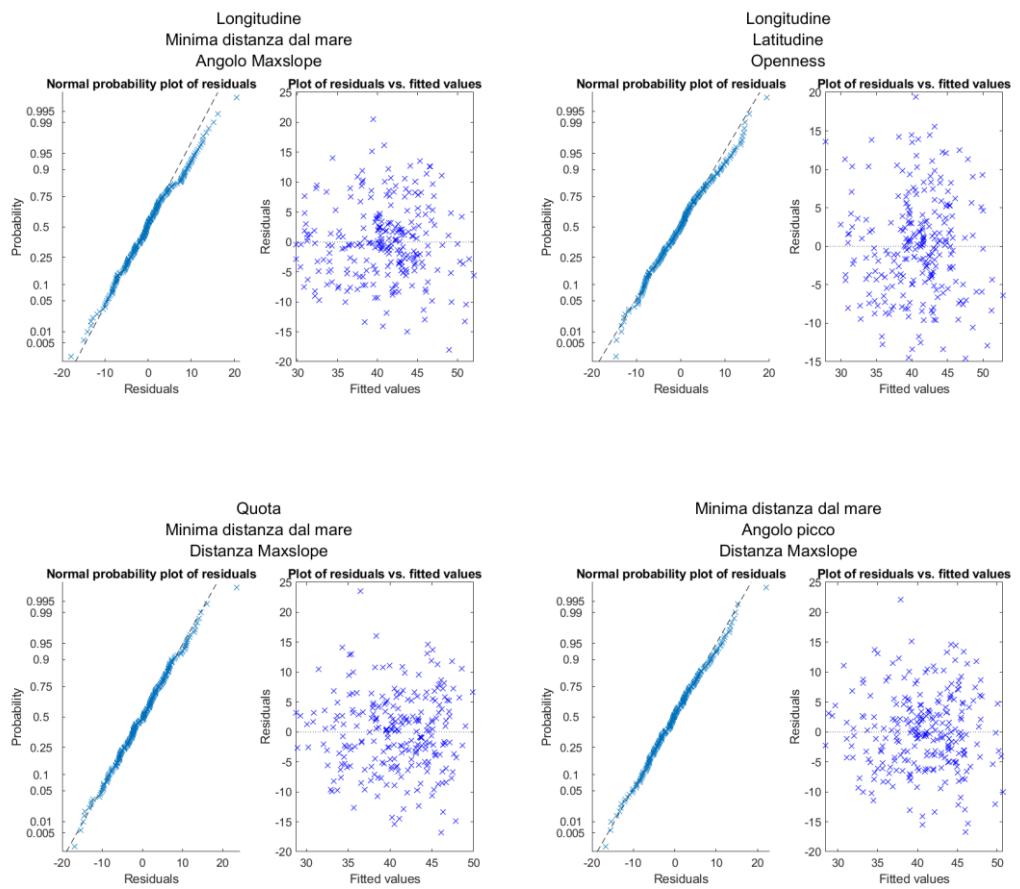
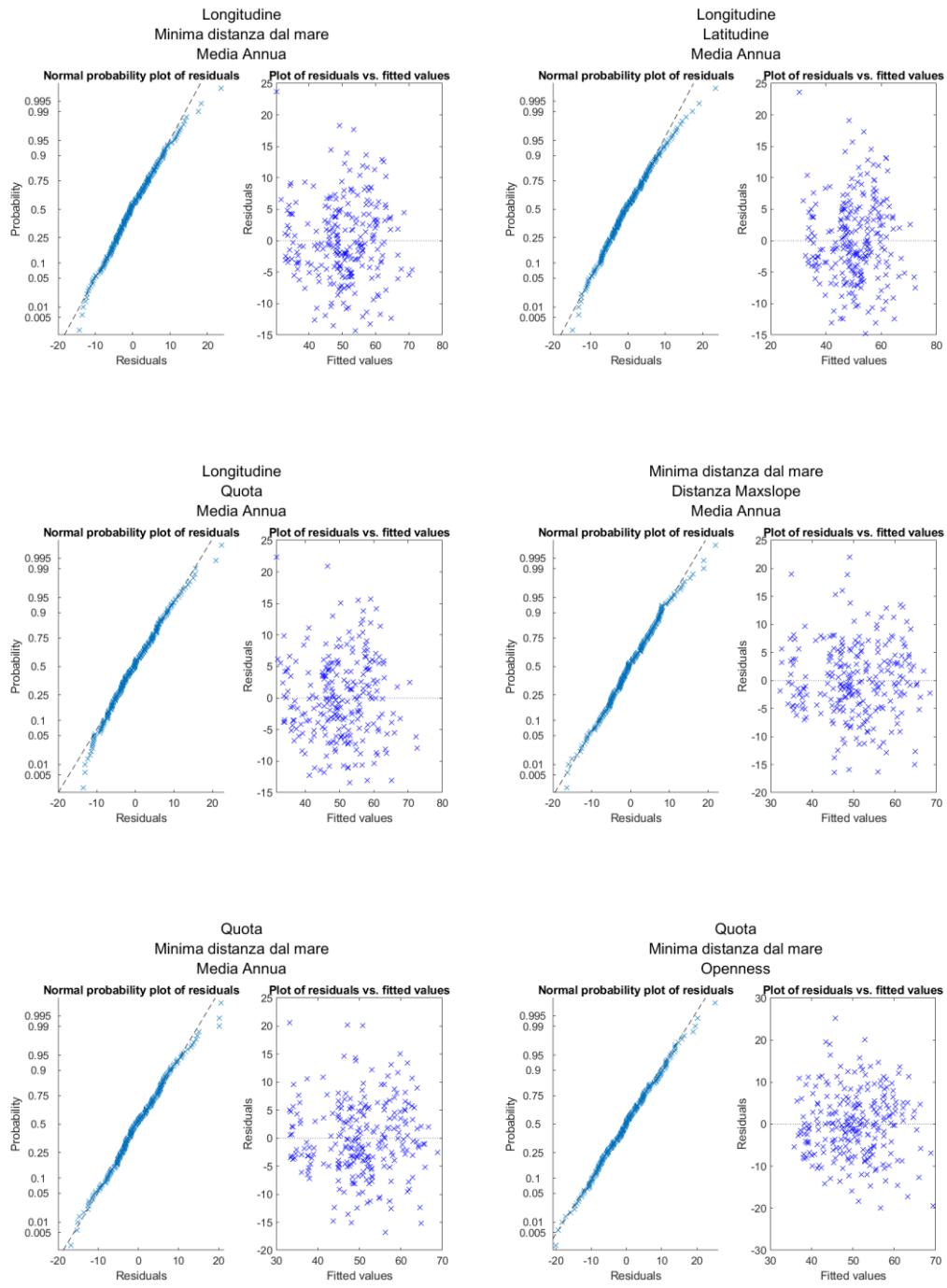


Tabella 98. Regressione 6h con mediana degli estremi, 3 variabili, area Campania.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.654	0.650	7.36E+01	-5.50E-05	-1.06E-01	2.90E-02
Longitudine	Latitudine	Media Annua	0.640	0.635	3.42E+02	-9.34E-05	-5.17E-05	3.01E-02
Longitudine	Quota	Media Annua	0.637	0.633	6.68E+01	-5.42E-05	-5.29E-03	3.32E-02
Minima distanza dal mare	Distanza Maxslope	Media Annua	0.625	0.620	2.52E+01	-1.35E-01	-2.50E-04	2.54E-02
Quota	Minima distanza dal mare	Media Annua	0.625	0.620	2.06E+01	-4.07E-03	-1.00E-01	2.90E-02
Quota	Minima distanza dal mare	Openness	0.474	0.468	1.94E+02	8.22E-03	-2.93E-01	9.19E+01
Longitudine	Minima distanza dal mare	Openness	0.452	0.446	2.35E+02	-3.17E-05	-2.31E-01	9.75E+01
Quota	Minima distanza dal mare	Angolo Maxslope	0.419	0.412	4.94E+01	6.82E-03	-2.67E-01	4.93E-01
Minima distanza dal mare	Angolo Maxslope	Distanza Maxslope	0.409	0.402	5.33E+01	-2.22E-01	4.05E-01	-4.00E-04
Longitudine	Minima distanza dal mare	Angolo Maxslope	0.407	0.400	7.93E+01	-2.99E-05	-2.12E-01	5.45E-01

*Figura 100. Diagrammi diagnostici per regressione 6h con mediana degli estremi, 3 variabili, area Campania*



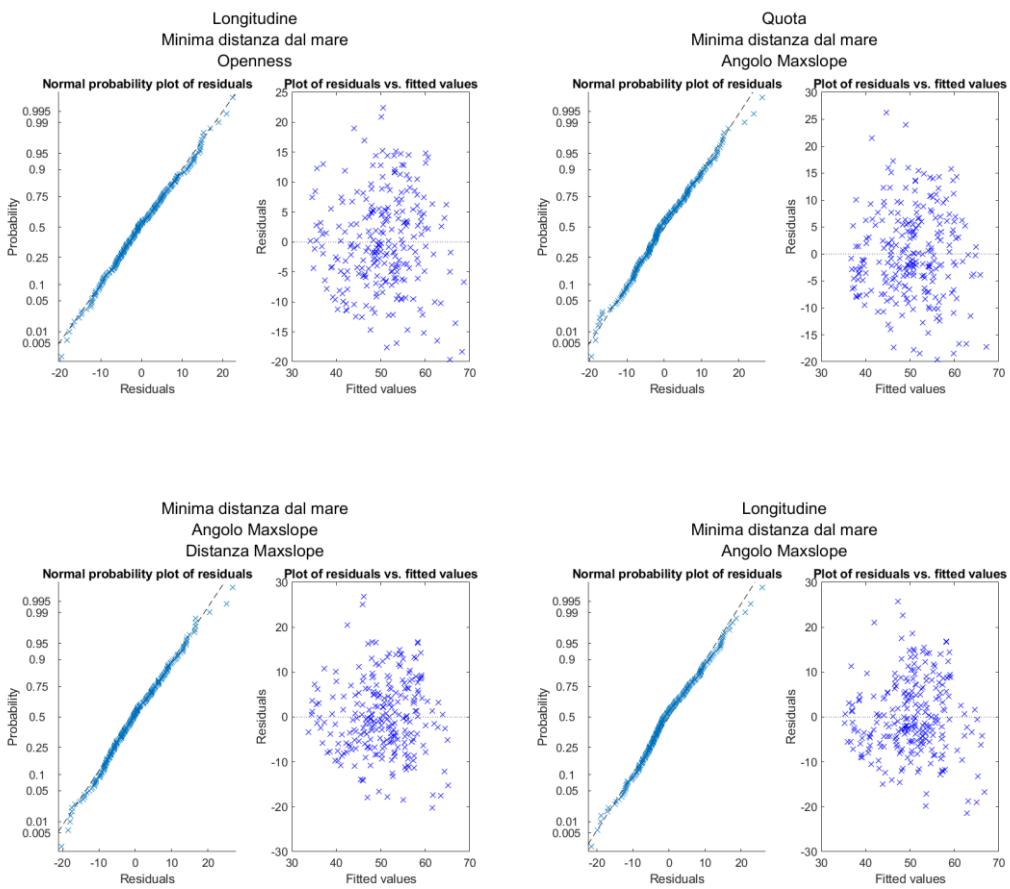
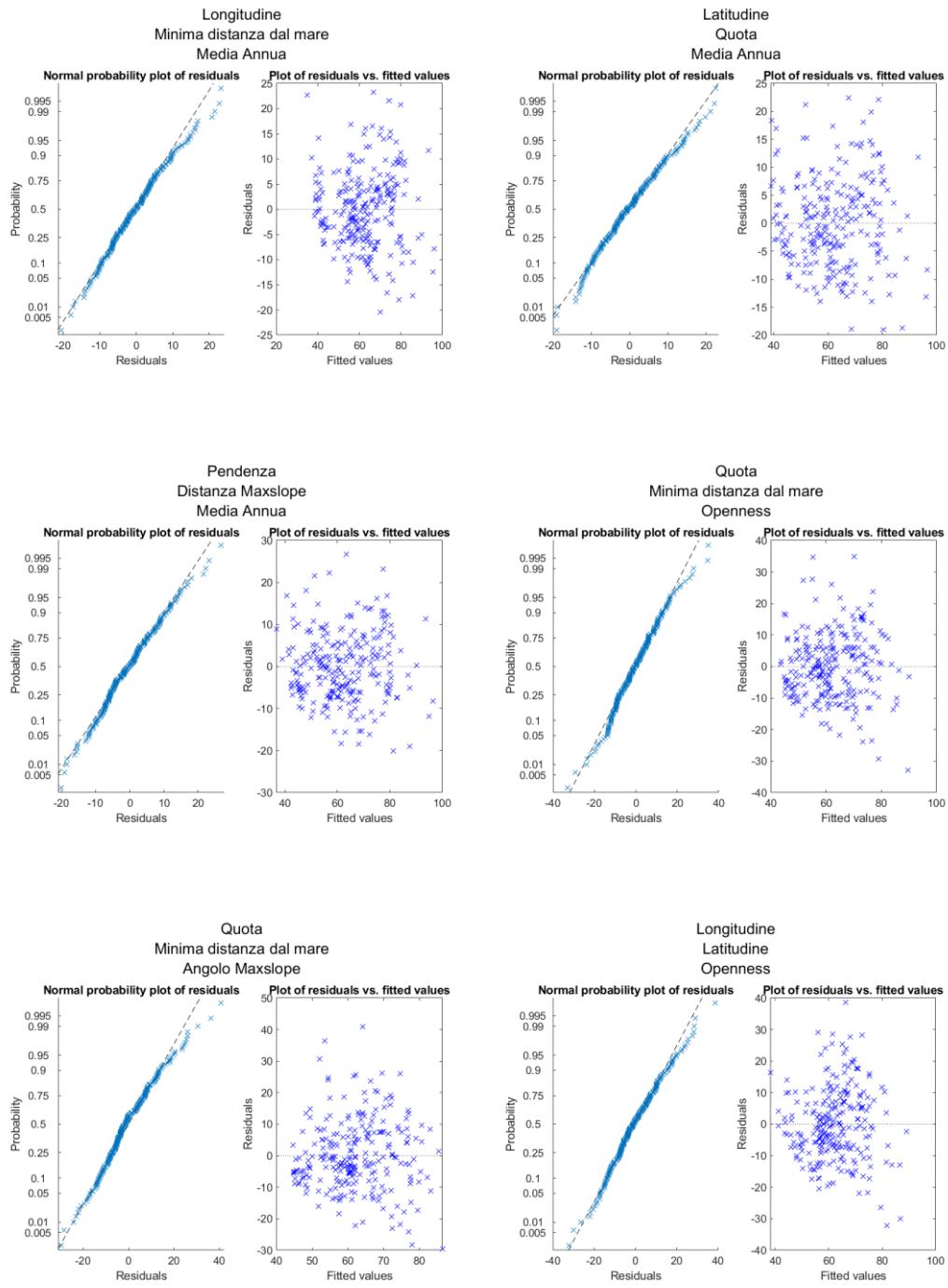


Tabella 99. Regressione 12h con mediana degli estremi, 3 variabili, area Campania.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Minima distanza dal mare	Media Annua	0.728	0.724	7.65E+01	-6.79E-05	-6.57E-02	4.65E-02
Latitudine	Quota	Media Annua	0.705	0.702	-1.99E+02	4.50E-05	-7.44E-03	5.11E-02
Pendenza	Distanza Maxslope	Media Annua	0.693	0.689	1.13E+01	-1.52E-01	-3.28E-04	4.56E-02
Quota	Minima distanza dal mare	Openness	0.492	0.486	2.79E+02	1.60E-02	-3.77E-01	-1.41E+02
Quota	Minima distanza dal mare	Angolo Maxslope	0.422	0.415	5.76E+01	1.39E-02	-3.38E-01	7.52E-01
Longitudine	Latitudine	Openness	0.394	0.387	1.12E+03	-1.37E-04	-1.54E-04	-1.51E+02
Minima distanza dal mare	Angolo Maxslope	Distanza Maxslope	0.385	0.377	6.35E+01	-2.47E-01	6.53E-01	-5.51E-04
Quota	Minima distanza dal mare	Distanza Maxslope	0.368	0.360	7.17E+01	1.49E-02	-3.70E-01	-1.24E-03
Minima distanza dal mare	Angolo picco	Distanza Maxslope	0.355	0.347	6.71E+01	-2.38E-01	6.19E-01	-1.04E-03
Longitudine	Latitudine	Angolo Maxslope	0.344	0.336	7.67E+02	-1.19E-04	-1.31E-04	8.60E-01

*Figura 101. Diagrammi diagnostici per regressione 12h con mediana degli estremi, 3 variabili, area Campania*



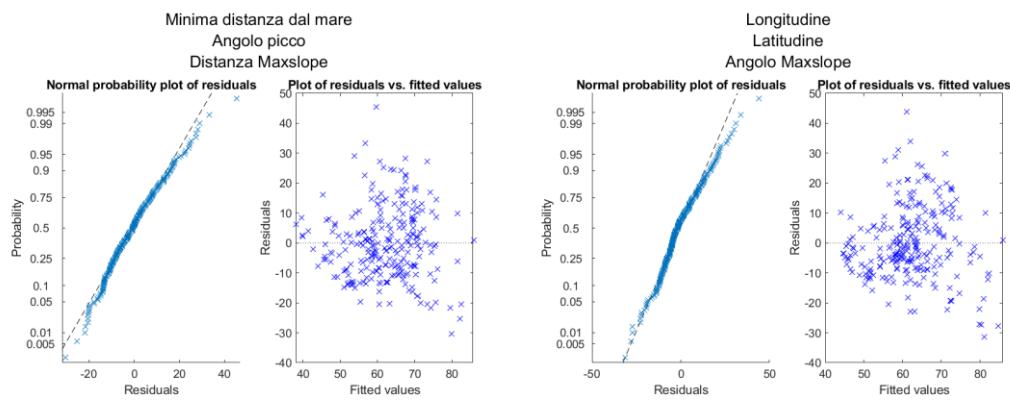
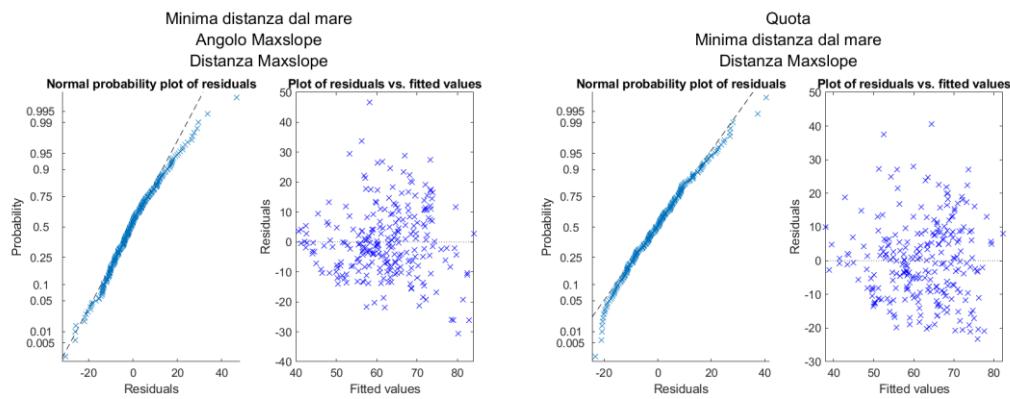
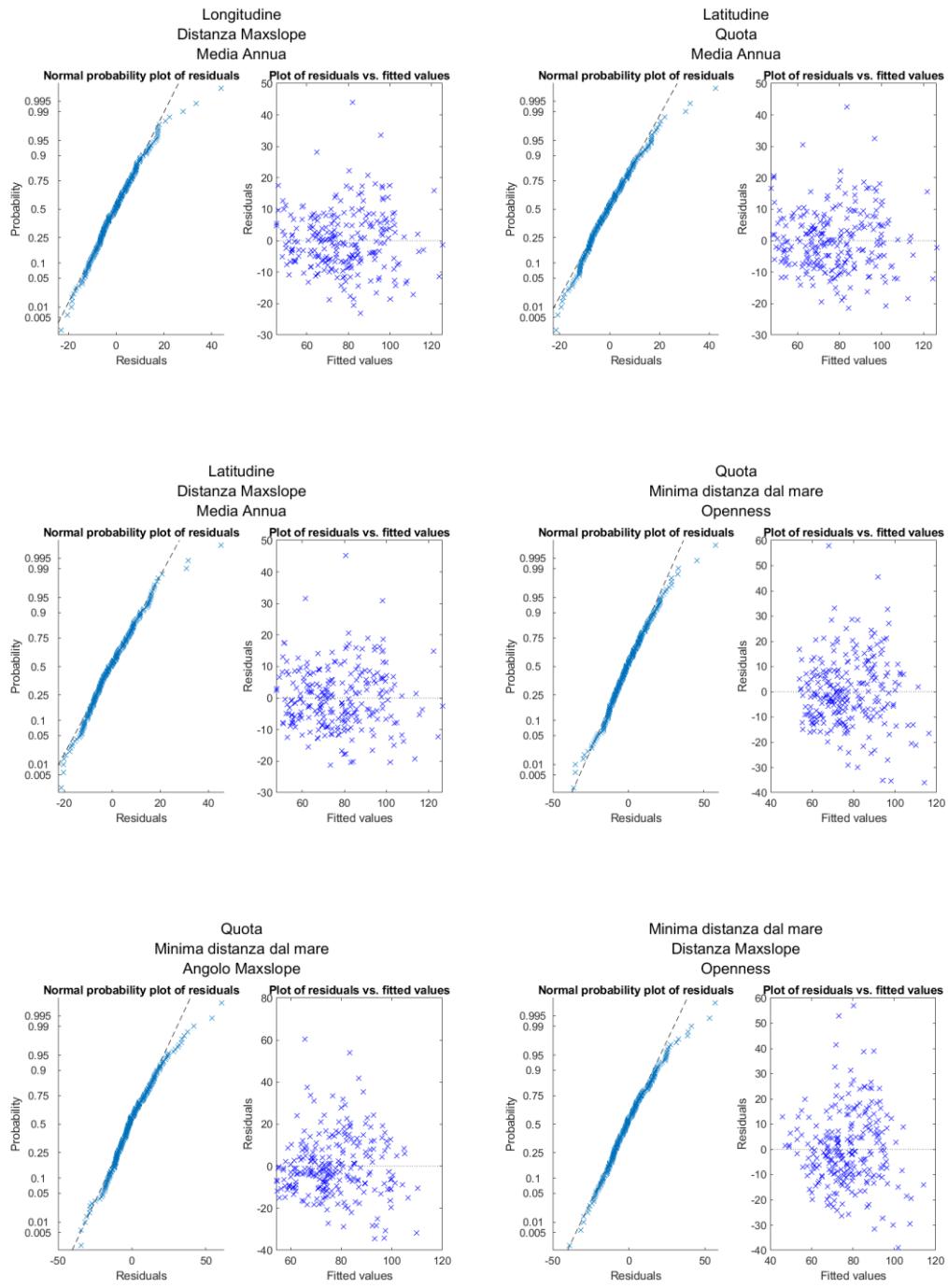
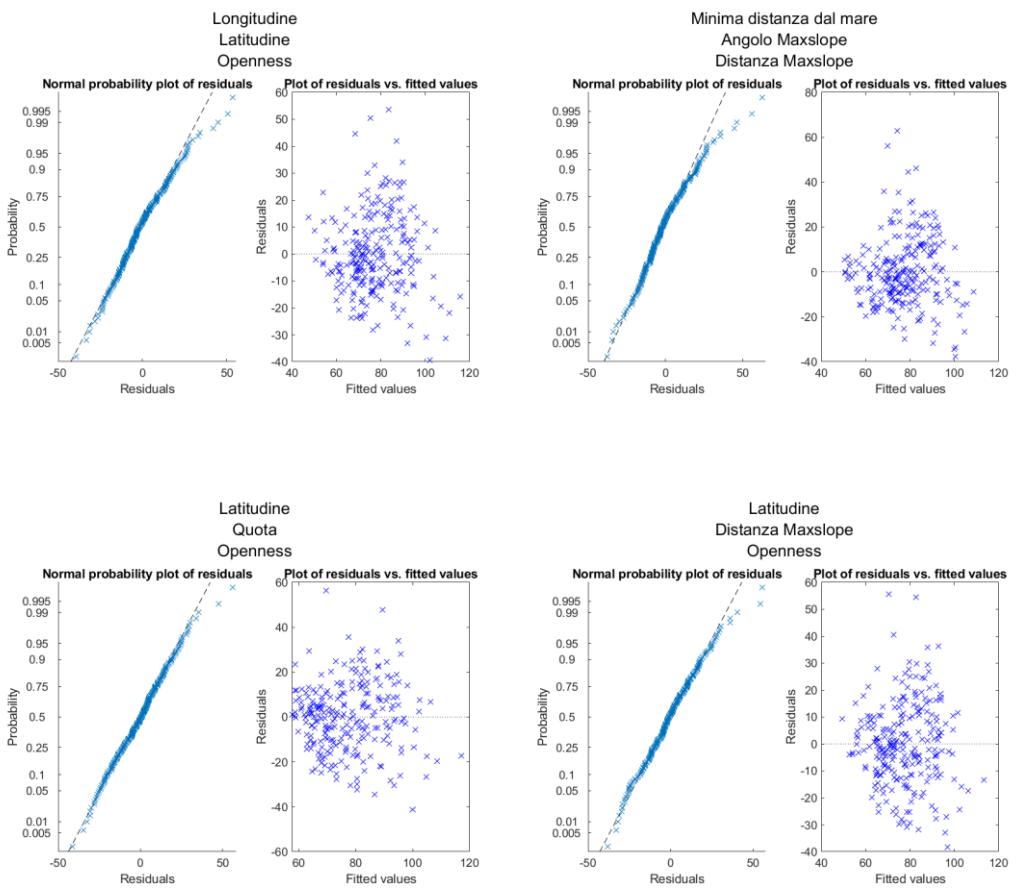


Tabella 100. Regressione 24h con mediana degli estremi, 3 variabili, area Campania.

Variabili			$R^2$	$R^2_{adj}$	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$
Longitudine	Distanza Maxslope	Media Annua	0.761	0.758	7.25E+01	-6.83E-05	-3.58E-04	6.27E-02
Latitudine	Quota	Media Annua	0.750	0.747	-2.77E+02	6.08E-05	-5.30E-03	6.80E-02
Latitudine	Distanza Maxslope	Media Annua	0.750	0.747	-2.22E+02	4.98E-05	-3.81E-04	6.38E-02
Quota	Minima distanza dal mare	Openness	0.511	0.505	3.83E+02	2.40E-02	-4.44E-01	-2.01E+02
Quota	Minima distanza dal mare	Angolo Maxslope	0.436	0.430	6.75E+01	2.08E-02	-3.86E-01	1.10E+00
Minima distanza dal mare	Distanza Maxslope	Openness	0.430	0.423	3.60E+02	-2.87E-01	-5.94E-04	-1.81E+02
Longitudine	Latitudine	Openness	0.398	0.391	1.30E+03	-1.34E-04	-1.69E-04	-2.12E+02
Minima distanza dal mare	Angolo Maxslope	Distanza Maxslope	0.383	0.376	7.58E+01	-2.49E-01	9.71E-01	-7.45E-04
Latitudine	Quota	Openness	0.371	0.364	8.06E+02	-9.20E-05	1.03E-02	-2.09E+02
Latitudine	Distanza Maxslope	Openness	0.367	0.359	7.26E+02	-8.44E-05	-7.76E-04	-1.74E+02

*Figura 102. Diagrammi diagnostici per regressione 24h con mediana degli estremi, 3 variabili, area Campania*

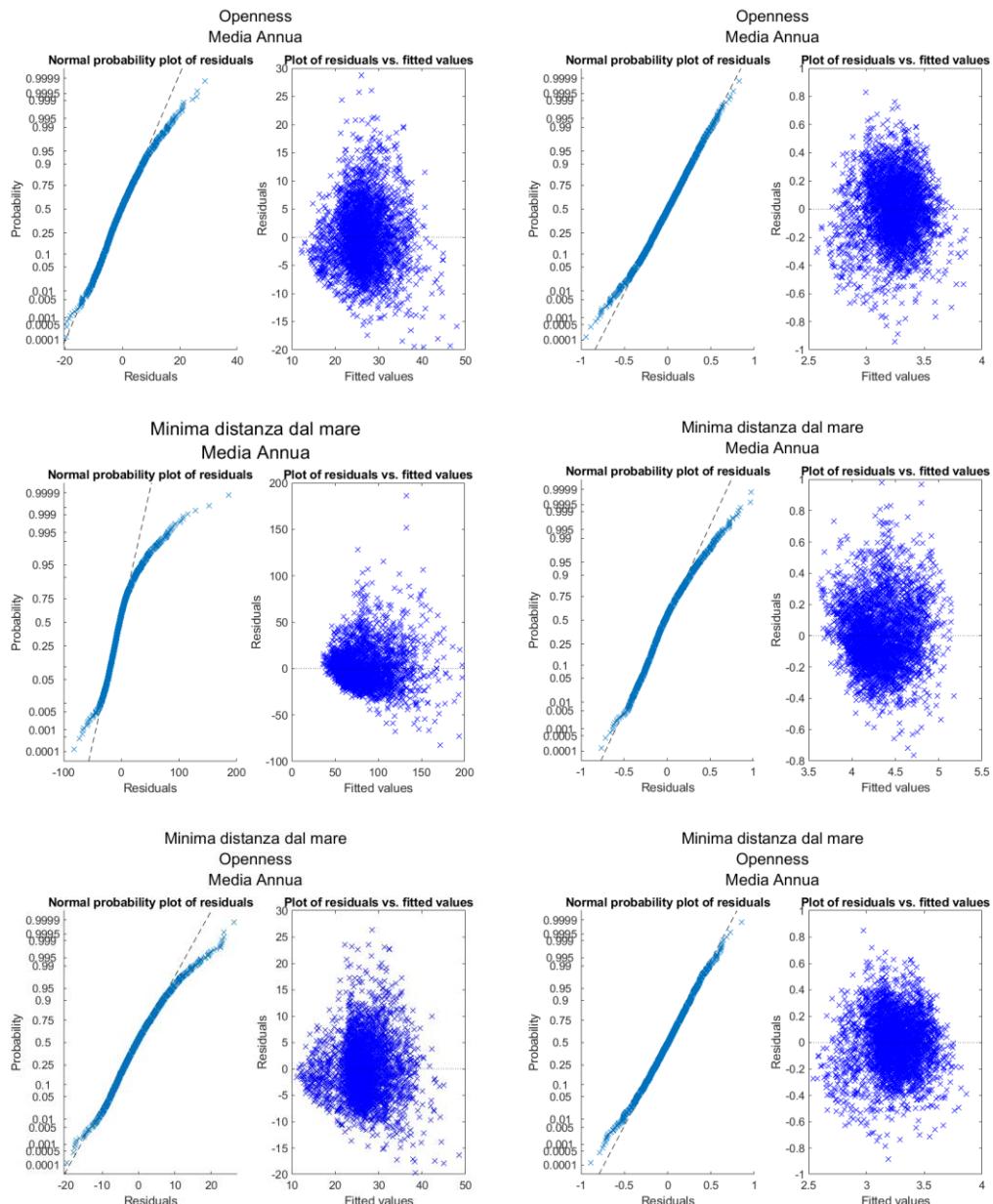


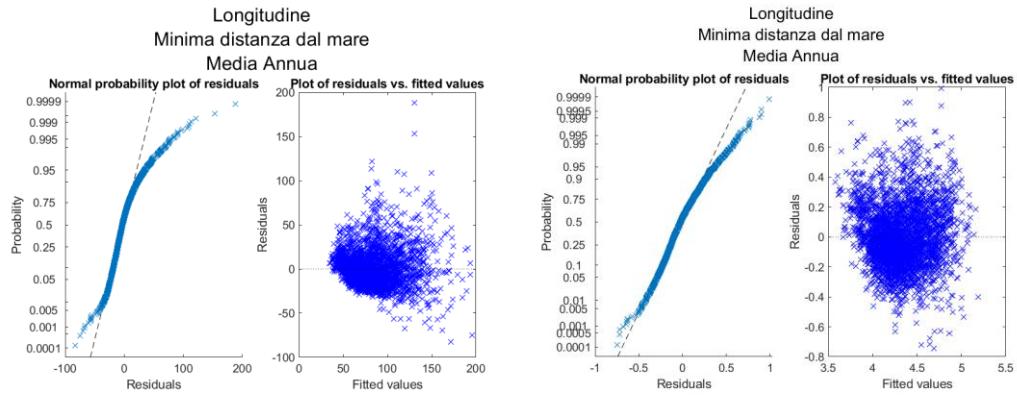


## Allegato 9 – Diagrammi diagnostici ottenuti dopo trasformazione logaritmica delle variabili dipendente e indipendenti

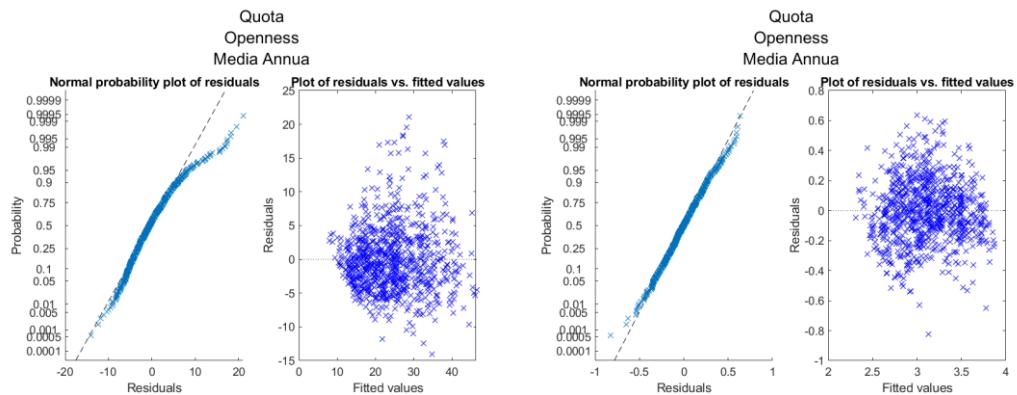
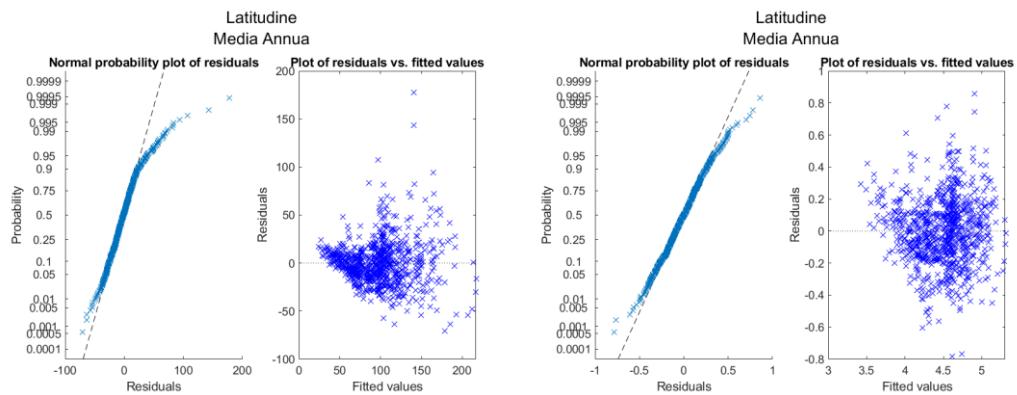
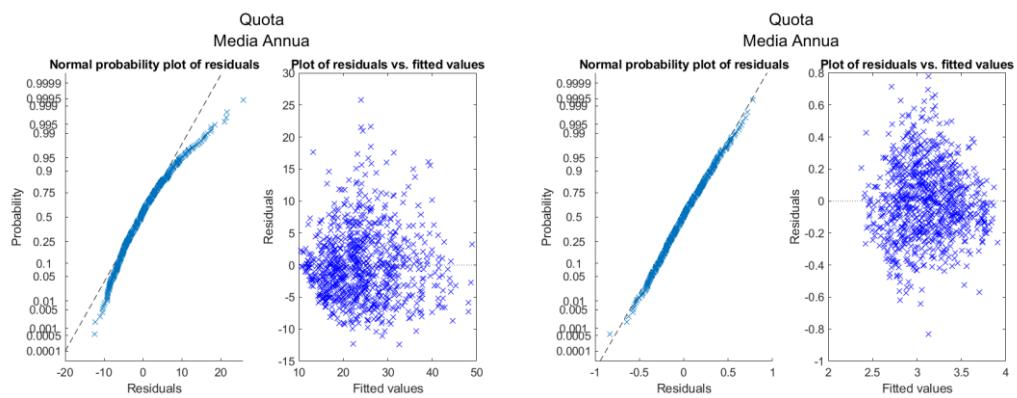
I grafici seguenti sono i diagrammi diagnostici dei migliori modelli regressivi tra la mediana delle precipitazioni estreme con classi di 2 e 3 variabili indipendenti, realizzati per ogni area di studio e alle durate di 1 h e 24 h. A destra sono riportati i diagrammi diagnostici ottenuti dopo trasformazione logaritmica delle variabili.

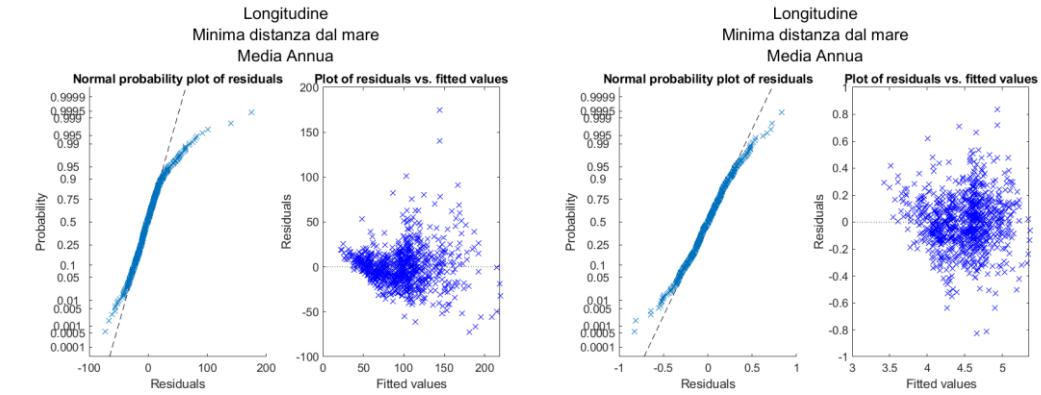
### *Italia*



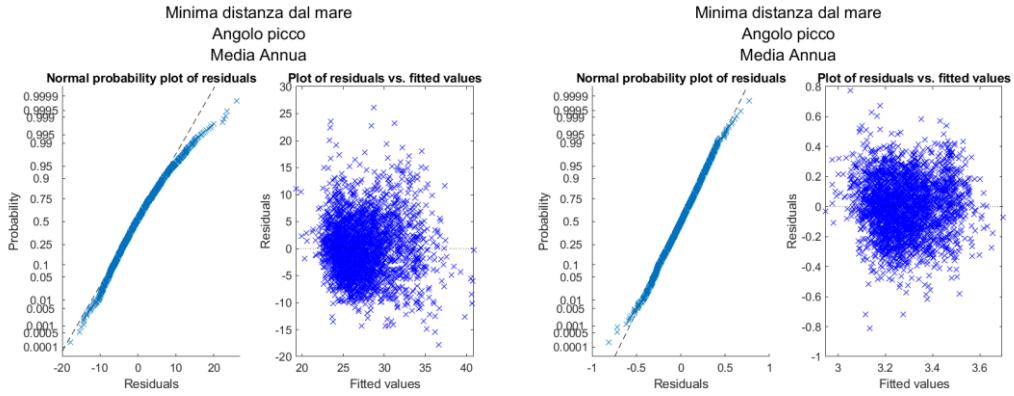
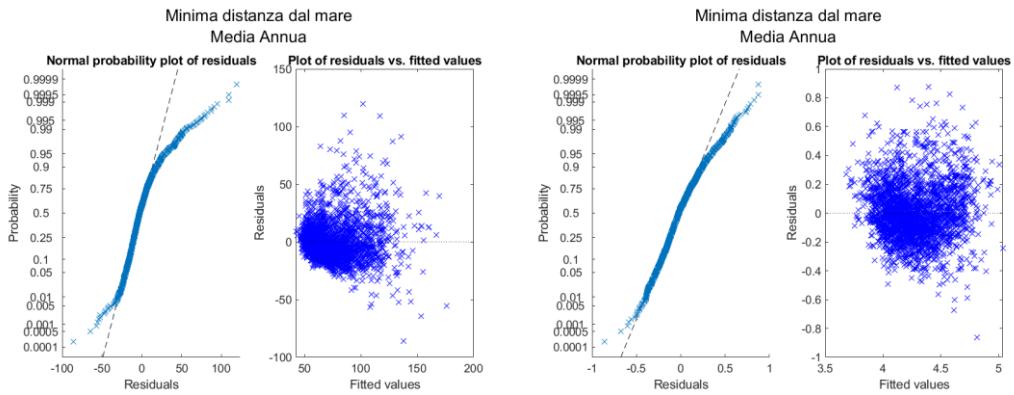
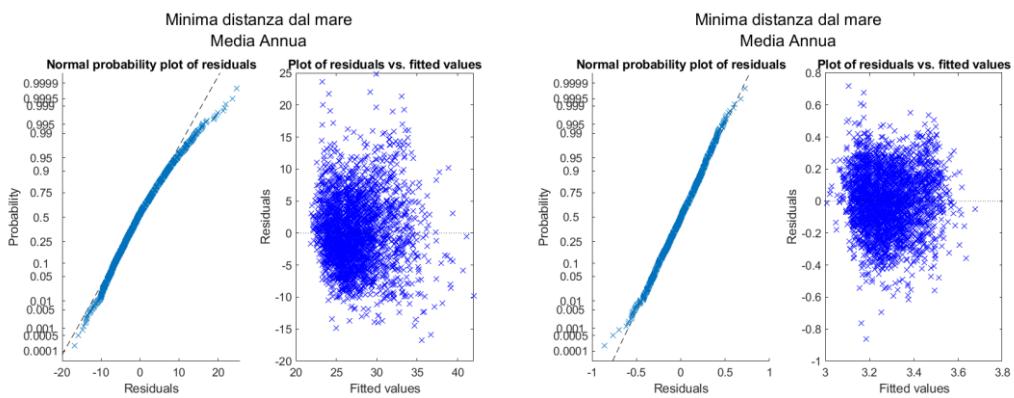


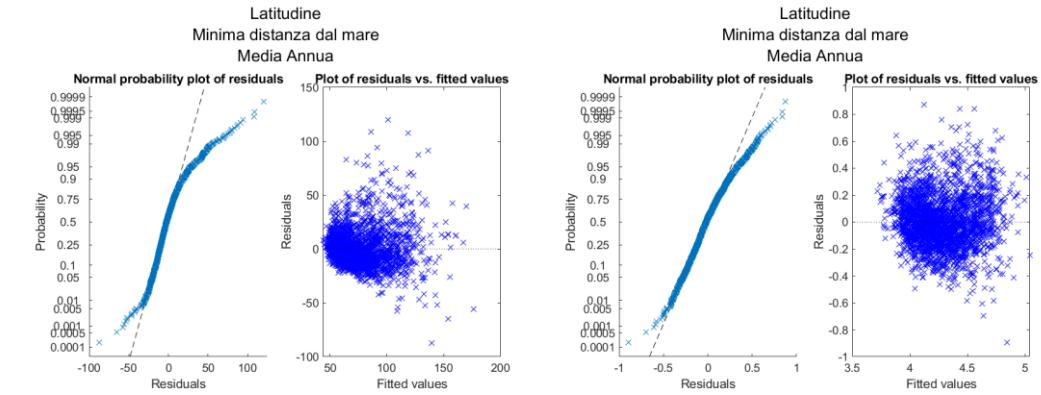
*Alpi*



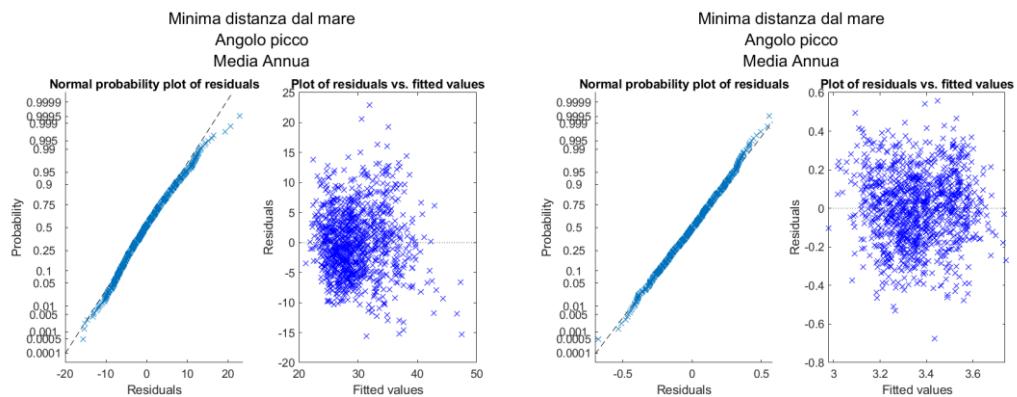
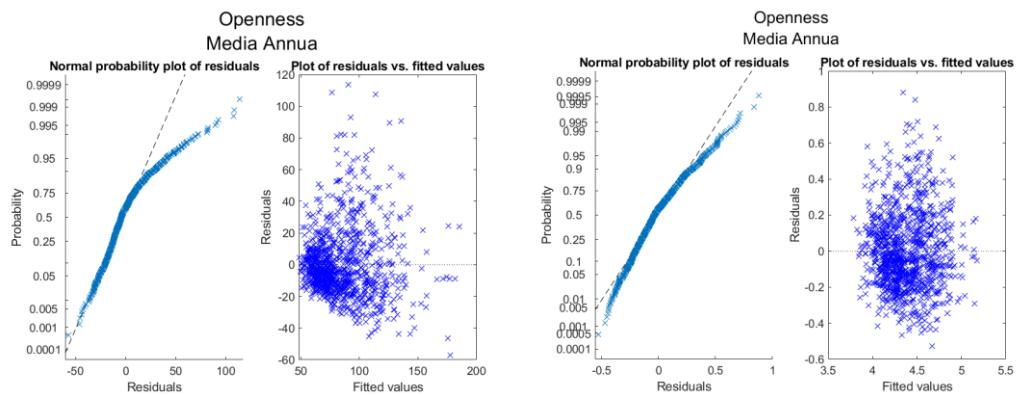
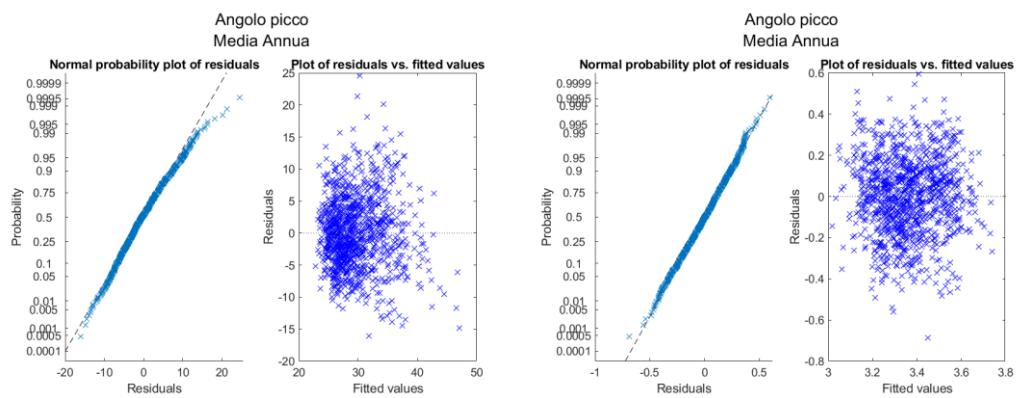


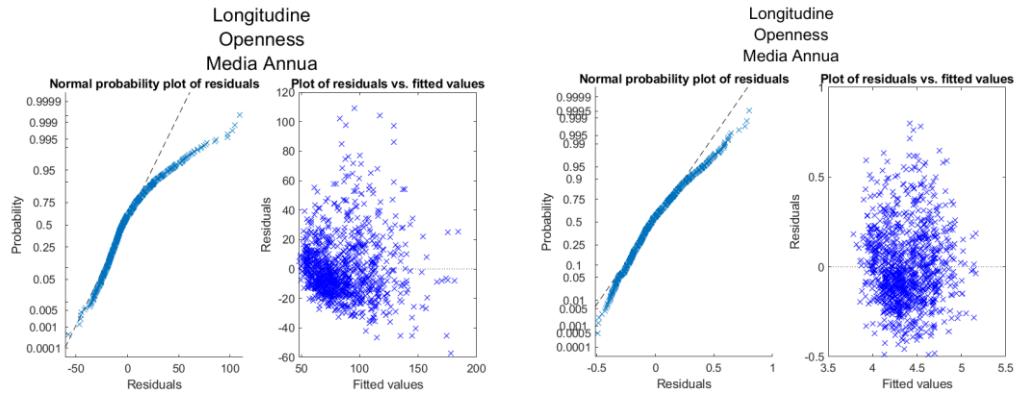
## Appennini



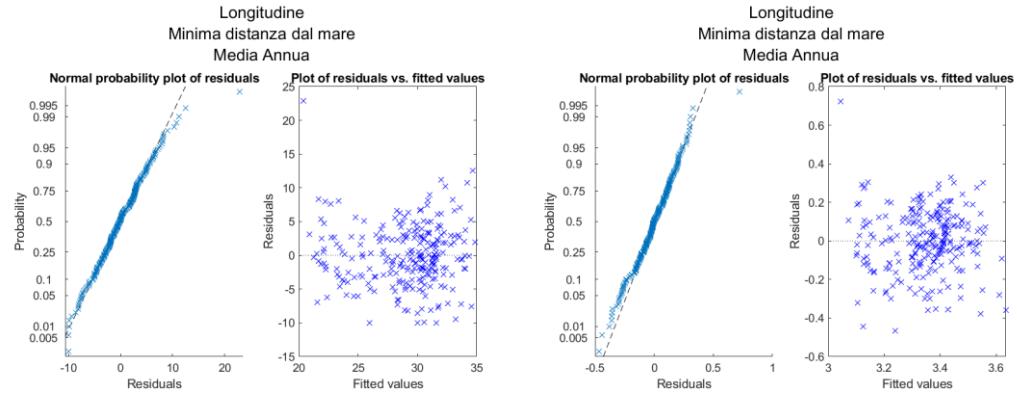
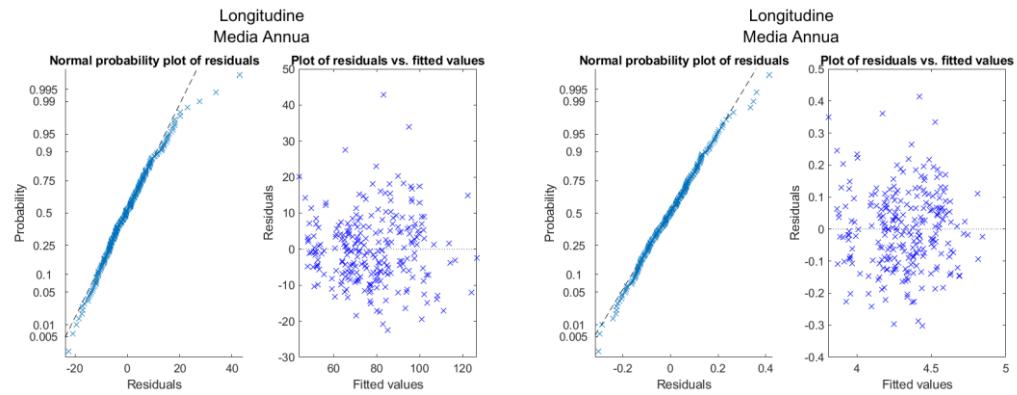
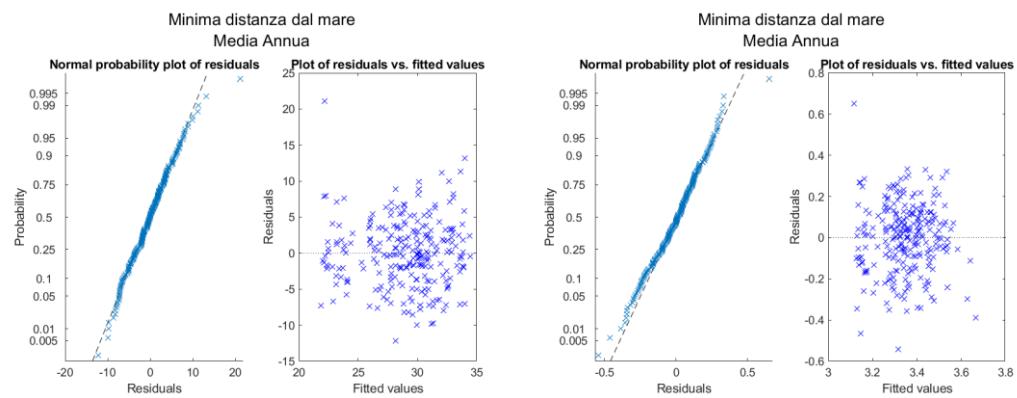


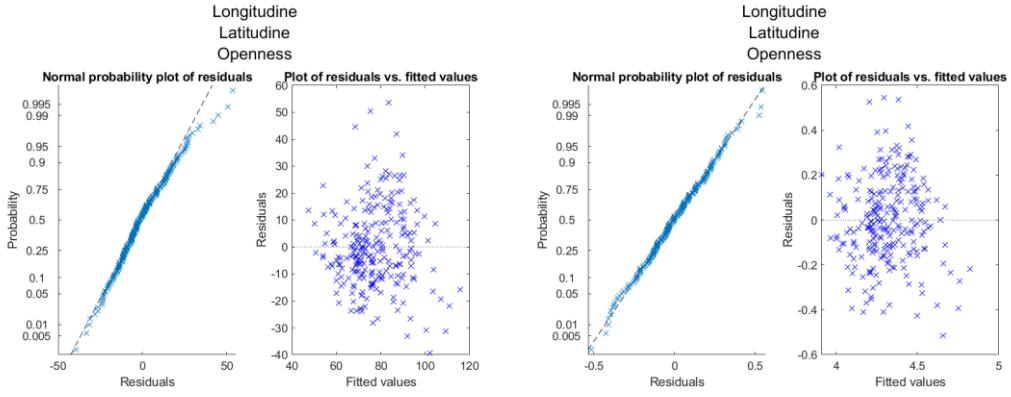
## Costa





## Campania





## Allegato 10 – Codici

### *Codice Python per il calcolo delle variabili $Angolo_{Picco}$ e $Distanza_{Picco}$*

Di seguito si riporta il codice scritto in linguaggio Python per il calcolo delle variabili  $Angolo_{Picco}$  e  $Distanza_{Picco}$ .

```
1. import numpy as np
2.
3. print "Elaborazione in corso..."
4.
5. raggio = 15000 # DEFINIRE distanza in m da analizzare
6. num_direzioni = 8 # DEFINIRE numero direzioni da studiare (
    8 dir cardinali)
7.
8. registry = QgsMapLayerRegistry.instance()
9.
10. layer = registry.mapLayersByName('DATABASE2') # DEFINIRE nome layer pluviometri
11. raster = registry.mapLayersByName('srtm_30m_unito_proj') # DEFINIRE nome DTM raster da utilizzare
12.
13. lunghezzax = raster[0].rasterUnitsPerPixelX()
14. prov_raster = raster[0].dataProvider()
15. feat_points = [feat for feat in layer[0].getFeatures(
    )]
16. points = [feat.geometry().asPoint() for feat in layer[0].getFeatures()]
17.
18. epsg = layer[0].crs().postgisSrid()
19. uri = "Point?crs=epsg:" + str(epsg) + "&field=id:integer"&index=yes"
20. mem_layer = QgsVectorLayer(uri, 'Estremi', 'memory')

21. prov = mem_layer.dataProvider()
22. group_points = []
23.
24. dati_id = []
25.
26. layer = iface.activeLayer()
27.
28. for f in layer.getFeatures():
29.     dati_id.append(int(f['ID']))
30.
31. id_prog = range(0, len(dati_id))
32.
33. Pluviometro = dict(zip(id_prog, dati_id))
34.
35. for i, point in enumerate(points):
36.     int_points = [QgsPoint(point[0] + np.sin(angle) * raggio, point[1] + np.cos(angle) * raggio) for angle in np.linspace(0, 2 * np.pi, num_direzioni, endpoint=False)]
```

```

37.         group_points.append(int_points)
38.
39.     lines = []
40.     idx_lines = []
41.     for i, group in enumerate(group_points):
42.         for point in group:
43.             lines.append([points[i], point])
44.             idx_lines.append(i)
45.
46.     for group in group_points:
47.         feats = [QgsFeature() for i in range(len(group))]

48.
49.         for i, feat in enumerate(feats):
50.             feat.setAttributes([i])
51.             feat.setGeometry(QgsGeometry.fromPoint(group[
52.                 i]))
53.
54.             prov.addFeatures(feats)
55.             QgsMapLayerRegistry.instance().addMapLayer(mem_layer)

56.
57.             uri = "LineString?crs=epsg:" + str(epsg) + "&field=id
58. :integer&field=dif_elev:double&field=BARRIERd:double&field=
59. tan_a:double&field=angolo:double&field=Pluviometro:integer&
60. field=direzione:string"&index=yes"
61.
62.             mem_layer = QgsVectorLayer(uri, 'direz_cardinali', 'm
63. emory')
64.
65.             prov = mem_layer.dataProvider()
66.
67.             feats = [QgsFeature() for i in range(len(lines))]
68.             dif_elev = []
69.             distanze = []
70.             ang_OBSTD = []
71.             direzioni = ['N', 'NE', 'E', 'SE', 'S', 'SW', 'W', 'N
72. W']
73.
74.             for i, feat in enumerate(feats): #i e' l'ID del pluvi
75.               ometro in analisi iterativa
76.                 geom = QgsGeometry.fromPolyline(lines[i])
77.                 int_points = []
78.                 #distanza e' la distanza multipli della dimension
e raster della cella in analisi
79.                 for distanza in np.arange(0, int(geom.length()), lunghezzax):
80.                     valori= []
81.                     point = geom.interpolate(distanza)
82.                     pt = point.asPoint()
83.                     int_points.append(pt)
84.
85.             prov.addFeatures(int_points)
86.
87.             QgsMapLayerRegistry.instance().addMapLayer(mem_layer)

```

```

79.         for p in int_points: #p sono le coordinate di
   80.             tutte le celle lungo le 8 direttive
   81.                 #valore sono tutte le altezze di tutte le
   82.                 #celle lungo le 8 direttive
   83.                     valore = prov_raster.identify(p,QgsRaster
   84.                         .IdentifyFormatValue).results()[1]
   85.                         valori.append(valore)
   86.                         valore_iniz = prov_raster.identify(points[idx_lin
   87.                             es[i]],QgsRaster.IdentifyFormatValue).results()[1]
   88. 
   89.             # Calcola differenza elevazione tra Max Elev lung
   90.             # o la direttrice - la quota del pluviometro
   91.             elev = np.subtract(np.max(valori), valore_iniz)
   92. 
   93.             # Calcola la distanza a cui si trova il punto con
   94.             # massima elevazione
   95.             # rispetto al Pluviometro NB valueindex sono il n
   96.             # um di pixel di distanza.
   97.             distanza = np.multiply(valori.index(np.max(valori
   98.                             )), lunghezzax)
   99.             #dist = distanza[valori.index(np.max(valori))]
  100. 
  101.             # Calcola OBST_I = tanQ = la differenza tra elev/
  102.             # distanza
  103.             if distanza != 0:
  104.                 tan_a = np.divide(elev, distanza)
  105.             else:
  106.                 tan_a = -0
  107. 
  108.             # Calcolo e attribuzione dell'indice K per associ
  109.             # are la direzione cardinale
  110.             if i % 8 == 0:
  111.                 k = 0
  112. 
  113.             # Scrivo output
  114.             ang_OBSt.append(angobst)
  115.             dif_elev.append(elev)
  116.             distanze.append(distanza)
  117.             feat.setAttributes([i, float(elev), float(distanza
  118.                             ), float(tan_a), float(angobst), Pluviometro[idx_lines[i]]
  119.                             , direzioni[k]])
  120.             feat.setGeometry(geom)
  121.             k += 1
  122. 
  123.             prov.addFeatures(feats)
  124.             QgsMapLayerRegistry.instance().addMapLayer(mem_layer)
  125. 
  126.             print "Elaborazione completata!"

```

## *Codice Python per il calcolo delle variabili Angolo<sub>Maxslope</sub> e Distanza<sub>Maxslope</sub>*

Di seguito si riporta il codice scritto in linguaggio Python per il calcolo delle variabili *Angolo<sub>Maxslope</sub>* e *Distanza<sub>Maxslope</sub>*.

```
1. import numpy as np
2.
3. print "Elaborazione in corso..."
4.
5. bufferDist = 15000 # DEFINIRE distanza in m da pluviometro
   da analizzare
6. numeroDirezioni = 8 # DEFINIRE n di direzioni da studiare (
   8 dir cardinali)
7.
8. registry = QgsMapLayerRegistry.instance()
9.
10.    layer = registry.mapLayersByName('DATABASE')[0] #DEFI
      NIRE Nome layer pluviometri
11.    raster = registry.mapLayersByName('srtm_30m_unito_pro
      j')[0] #DEFINIRE Nome DTM raster da utilizzare (SRTM30m)
12.
13.    lunghezzax = raster.rasterUnitsPerPixelX() #leggo e m
      emorizzo dimensione in m del raster
14.    prov_raster = raster.dataProvider()
15.    feat_points = [feat for feat in layer.getFeatures()]

16.    points = [feat.geometry().asPoint() for feat in layer
      .getFeatures()]
17.
18.    epsg = layer.crs().postgisSrid()
19.
20.    dati_id = []
21.
22.    layer = iface.activeLayer()
23.
24.    for f in layer.getFeatures():
25.        dati_id.append(int(f['ID']))
26.
27.    id_prog = range(0,len(dati_id))
28.
29.    Pluviometro = dict(zip(id_prog,dati_id))
30.
31.    # -----
32.    # TRACCIO 8 PUNTI AGLI ESTREMI DI OGNI DIREZIONE CARD
      INALE
33.
34.    uri = "Point?crs=epsg:" + str(epsg) + "&field=id:int
      ger"&index=yes"
35.
36.    #mem_layer = QgsVectorLayer(uri,'Estremi')
```

```

37.     mem_layer = QgsVectorLayer(uri, 'Estremi', 'memory')
38.
39.     prov = mem_layer.dataProvider()
40.
41.     group_points = []
42.
43.     for i, point in enumerate(points):
44.         #trova e assegna a int_points le 8 coordinate deg
        li ESTREMI delle direttrici
45.         estremi_pt = [QgsPoint(point[0] + np.sin(angle) *
        bufferDist, point[1] + np.cos(angle) * bufferDist)
46.             for angle in np.linspace(0, 2 * np.pi, 8, endpoint
        =False)]
47.
48.         #trova e assegna alla stringa group_points le 8 c
        oordinate degli estremi delle direttrici
49.         group_points.append(estremi_pt)
50.
51.     lines = []
52.     idx_lines = []
53.
54.     for i, group in enumerate(group_points):
55.         for point in group:
56.             lines.append([points[i], point]) #stringa con
                coordinate x,y degli estremi delle 8 direzioni
57.             idx_lines.append(i) #stringa con indici i
58.
59.     for group in group_points:
60.         feats = [QgsFeature() for i in range(len(group))]

61.         for i, feat in enumerate(feats):
62.             feat.setAttributes([i])
63.             feat.setGeometry(QgsGeometry.fromPoint(group[
        i]))
64.             prov.addFeatures(feats)
65.
66.     QgsMapLayerRegistry.instance().addMapLayer(mem_layer)

67.
68.     # -----
69.     # TRACCIO LE 8 LINEE PER OGNI DIREZIONE CARDINALE
70.     # CERCO MASSIMA PENDENZA PER OGNUNA DI QUESTE
71.
72.     uri = "LineString?crs=epsg:" + str(epsg) + "&field=id
        :integer&field=Pluviometro:integer&field=dif_elev:double&fi
        eld=distanza:double&field=angolo:double&field=direzione:str
        ing"&index=yes"
73.
74.     mem_layer = QgsVectorLayer(uri, 'direz_maxslope', 'me
        mory')
75.     prov = mem_layer.dataProvider()
76.
77.     feats = [QgsFeature() for i in range(len(lines))]

```

```

78.      direz = ['N', 'NE', 'E', 'SE', 'S', 'SW', 'W', 'NW']
79.
80.      for i, feat in enumerate(feats): #numera le feats secondo "i" a partire da 0
81.          #coordinate degli delle 8 direttrici da pluv a ogni estremo
82.          geom = QgsGeometry.fromPolyline(lines[i])
83.
84.          #Ciclo for PER LE 8 DIREZIONI
85.          for j in range (0,8):
86.              #calcola la quota del pluviometro
87.              quota_pluv = prov_raster.identify(points[idx_lines[i]], QgsRaster.IdentifyFormatValue).results()[1]
88.
89.              ext_points = []
90.              lines_list = []
91.              dif_elev_list = []
92.              distanza_list = []
93.              tan_a_list = []
94.              difelev = []
95.
96.              for distanza in np.arange(0, int(geom.length()), lunghezzax):
97.                  valorevetta = []
98.                  point = geom.interpolate(distanza)
99.                  pt = point.asPoint()
100.                 ext_points.append(pt)
101.
102.                 #quota delle vette di tutte le celle
103.                 valorevetta = prov_raster.identify(pt,QgsRaster.IdentifyFormatValue).results()[1]
104.
105.                 if (valorevetta) > -100:
106.                     difelev = (valorevetta - quota_pluv)
107.
108.                     if (difelev) > 150:
109.                         dif_elev_list.append(difelev)
110.                         distanza_list.append(distanza)
111.                         tana = (difelev / distanza)
112.                         tan_a_list.append(tana)
113.                 else:
114.                     dif_elev_list.append(0)
115.                     distanza_list.append(0)
116.                     tana = 0
117.                     tan_a_list.append(tana)
118.
119.             max = np.max(tan_a_list) #ricava il massimo delle tangenti
120.             index_max = tan_a_list.index(max) #crea lista con i massimi di tutte le tangenti
121.             distanza_finale = distanza_list[index_max]
122.             dif_elev_finale = dif_elev_list[index_max]

```

```
123.         ang_OBStd = np.degrees(np.arctan(max)) #converte
    la massima tangente in massimo angolo21
124.
125.         if i % 8 == 0:
126.             k = 0
127.
128.         feat.setAttributes([i, Pluviometro[idx_lines[i]],
    float(dif_elev_finale), float(distanza_finale), float(ang_
    OBStd), direz[k]])
129.         feat.setGeometry(geom)
130.         k += 1
131.
132.     prov.addFeatures(feats)
133.
134.     QgsMapLayerRegistry.instance().addMapLayer(mem_layer)
135.
136. print "Elaborazione completata!"
```

## *Codice Matlab per l'esecuzione delle regressioni lineari multiple.*

Di seguito è riportato in codice Matlab utilizzato per effettuare le regressioni lineari multiple.

```
1. %SCRIPT MATLAB per calcolo combinazione semplice di n elementi in classe k
2. %e la costruzione di un modello di regressione lineare mediante FITLM
3.
4. PREDITTIITALIA = [LONG LAT quota pendenza DIST_MARE OBST_ang BARR MAXSLOPE_ang MAXSLOPE_dist pioggia_totale];
5.
6. v = [1 2 3 4 5 6 7 8 9 10
       11]; %Specificare numero di variabili da combinare
7. p = nchoosek(v,2);
8. Nr = size(p,1);
9. mdl = cell(Nr, 1);
10. for K = 1 : Nr
11.     colonne = p(K,:);
12.     pred = PREDITTIITALIA(:,colonne);
13.     mdl{K} = fitlm(pred,pioggia(:,6)); % Modificare colonna pioggia
14. end
15.
16. %Estrazione delle variabili di regressione
17. Rsquared = cellfun(@(M) M.Rsquared.Ordinary, mdl);
18. Radjusted = cellfun(@(M) M.Rsquared.Adjusted, mdl);
19. Statistiche = cellfun(@anova, mdl, 'Uniform', 0 );
20. pValues_cell = cellfun(@(T) T.pValue(1:end-1), Statistiche, 'Uniform', 0 );
21. Pvalue = horzcat(pValues_cell{:});
22. stats = cellfun(@(Md1) Md1.Coefficients, mdl, 'uniform', 0 );
23. stats_cell = cellfun(@(T) T.Estimate(1:end), stats, 'uniform', 0 );
24. Estimate = horzcat(stats_cell{:});
```