

1 *Article*

2 **Fractal study of the 1997-2017 Italian seismic**  
3 **sequences: a joint analysis of seismological data and**  
4 **DInSAR measurements**

5 **Emanuela Valerio <sup>1</sup>, Vincenzo De Novellis <sup>1</sup>, Mariarosaria Manzo <sup>1</sup> and Pietro Tizzani <sup>1,\*</sup>**

6 <sup>1</sup> National Research Council (CNR), Istituto per il Rilevamento Elettromagnetico dell' Ambiente (IREA),  
7 Napoli, Italy

8 \* Correspondence: tizzani.p@irea.cnr.it; Tel.: +39-0817620635

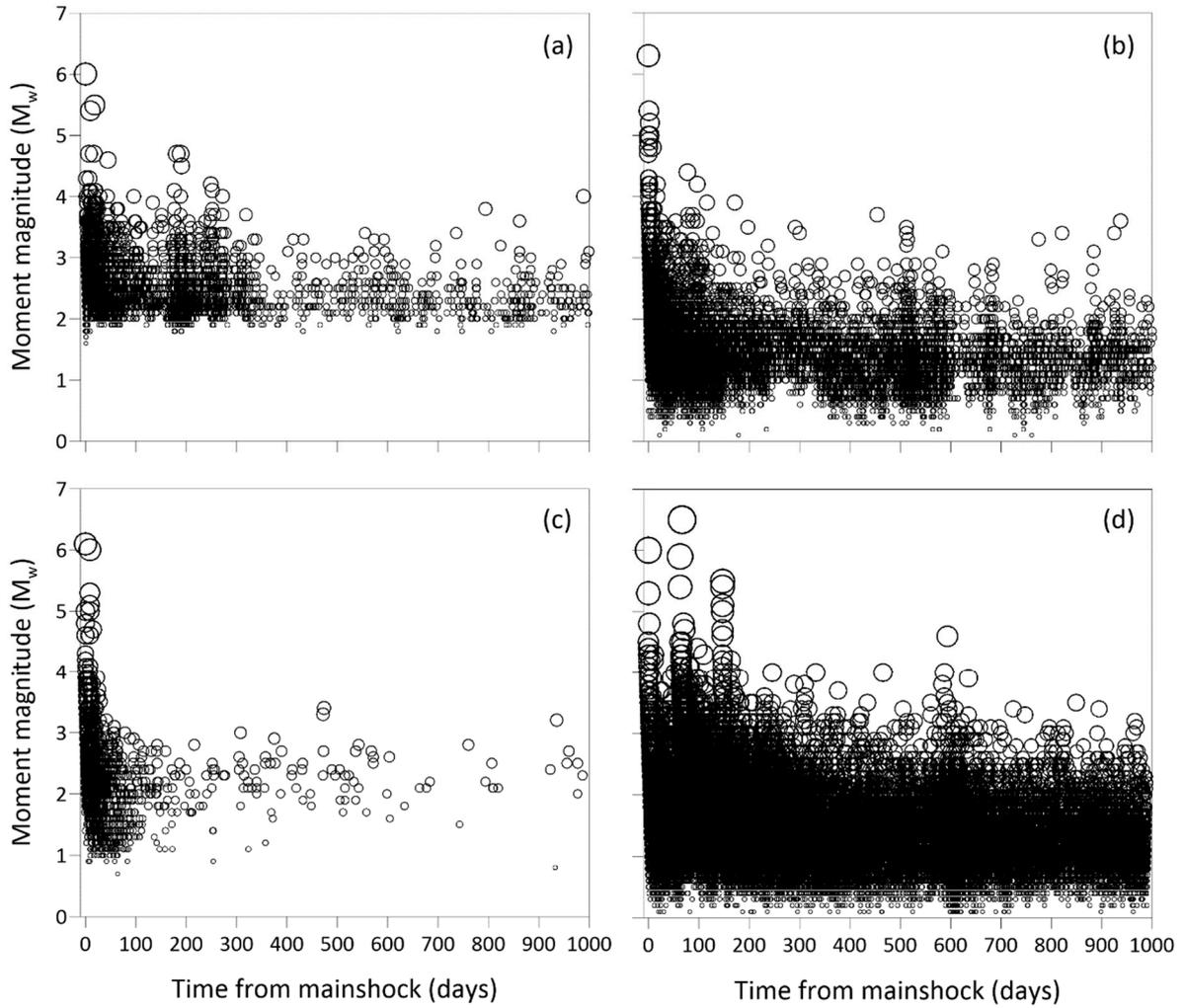
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10 **Introduction**

11 This supplement contains supporting figures cited in the main document. In particular, it is aimed to provide  
12 additional information on:

- 13 **a)** Magnitude vs. Time (Figure S1).  
14 **b)** Interferometric SAR data pairs (Figure S2).  
15 **c)** DInSAR displacement values (Table S1).  
16 **d)** R-squared analysis on a 200 days time-lapse (Figure S3).  
17 **e)** Application of the Fractal Theory (Figure S4).

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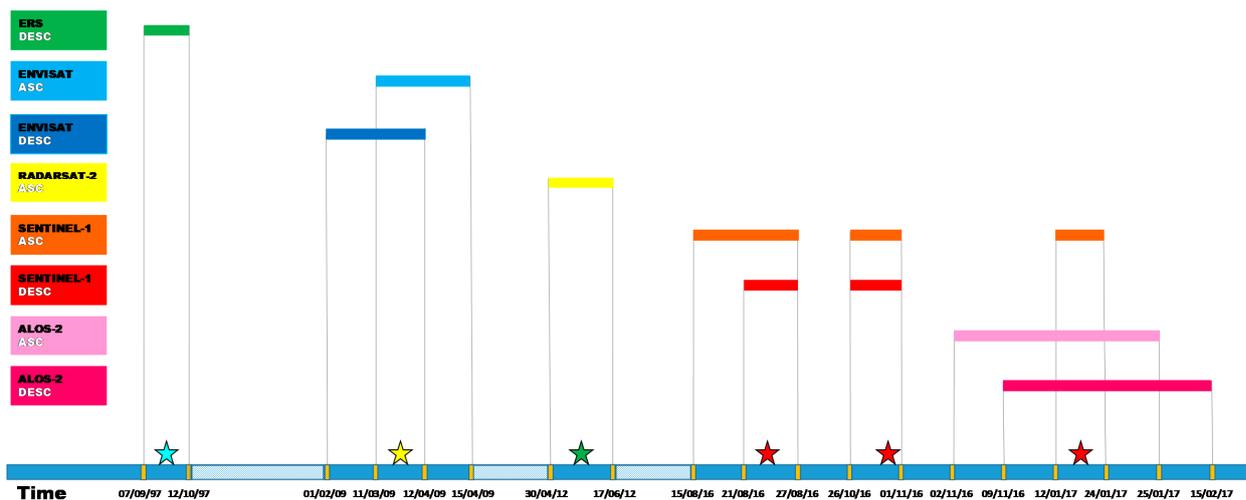
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**Figure 1.** Magnitude vs. Time. Magnitude distribution versus time in the case of (a) the 1997 Colfiorito, (b) the 2009 L'Aquila earthquake, (c) the 2012 Emilia and (d) the 2016-2017 Central Italy seismic sequences. The days from the mainshock and the magnitude values are shown on the x-axis and are shown on the y-axis, respectively.

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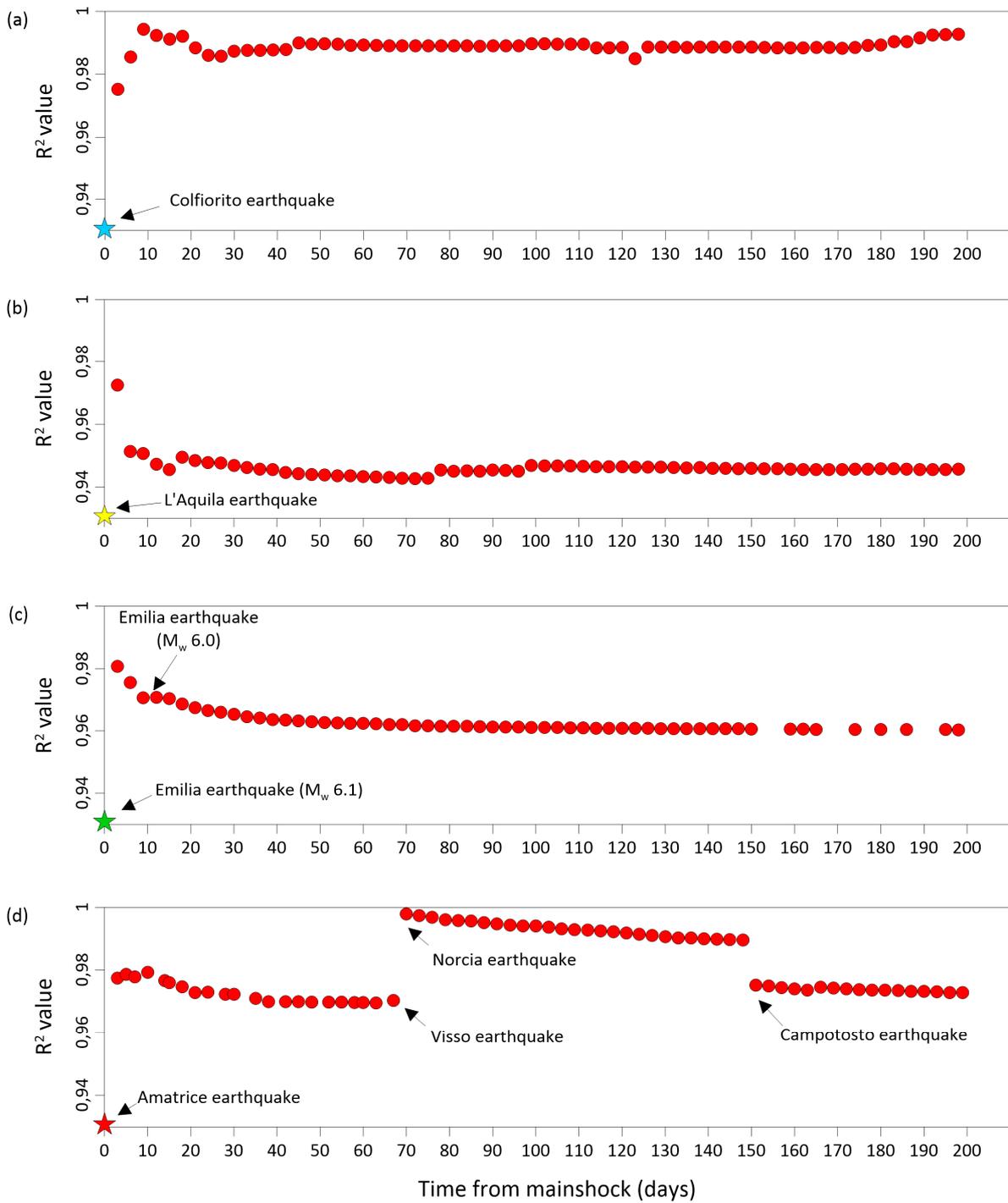
**Figure 2.** Interferometric SAR data pairs. Timesheet and coseismic interferometric SAR data pairs exploited for the analysis. The  $M_w$  6.0 Colfiorito, the  $M_w$  6.3 L'Aquila, the  $M_w$  6.1 Emilia mainshocks are represented by the light blue, yellow and green stars, respectively; the Central Italy mainshocks (i.e., the  $M_w$  6.0 Amatrice, the  $M_w$  6.5 Norcia and the  $M_w$  5.5 Campotosto earthquakes) are highlighted by the red stars.

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32 **Table S1.** Retrieved DInSAR displacement values of the considered seismic sequences.

Earthquake	Sensor	Displacement (cm)	
		LOS	Vertical
<b>Colfiorito earthquake</b>	ERS	25 (subsidence)	-
<b>L'Aquila earthquake</b>	ENVISAT	-	25 (subsidence)
<b>Emilia earthquake</b>	Radarsat-2	17 (uplift)	-
<b>Amatrice earthquake</b>	Sentinel-1	-	20 (subsidence)
<b>Norcia earthquake</b>	Sentinel-1	-	70 (subsidence)   10 (uplift)
<b>Campotosto earthquake</b>	Sentinel-1	-	15 (subsidence)

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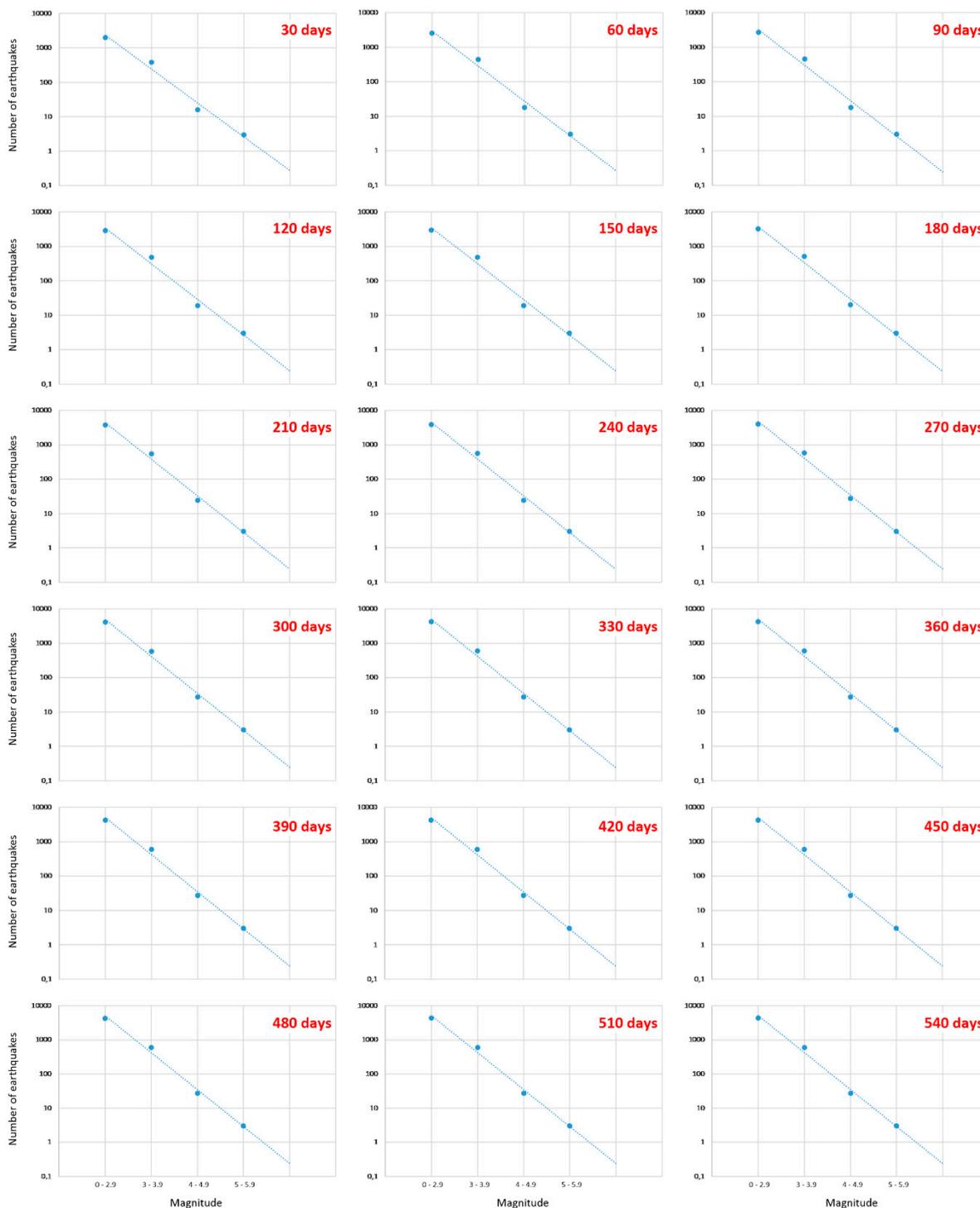
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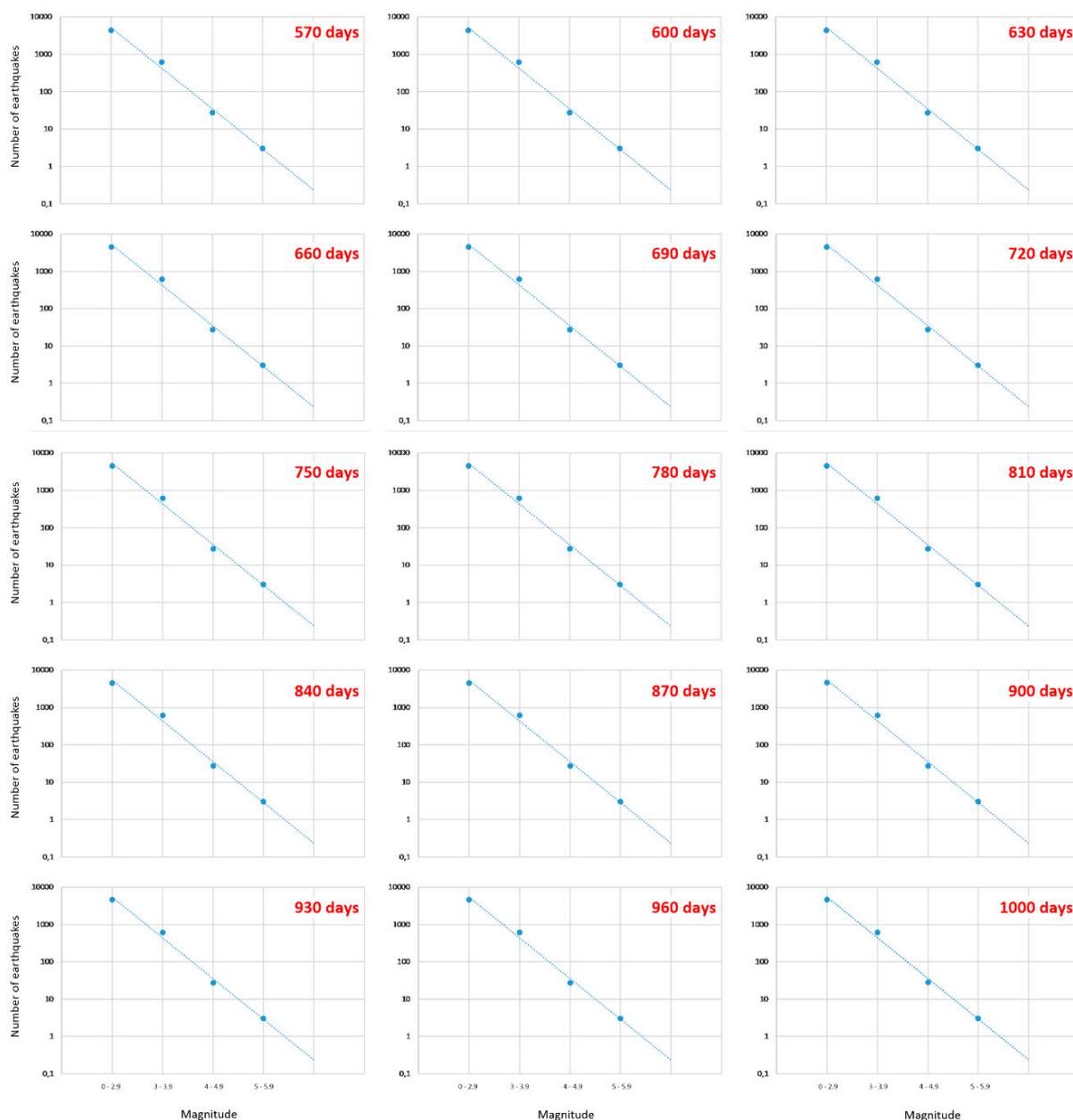
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**Figure S3.** R-squared analysis on a 200 days time-lapse. Detailed analysis (200 days) of the R-squared temporal evolution in the case of (a) the 1997 Colfiorito, (b) the 2009 L'Aquila, (c) the 2012 Emilia and (d) the 2016-2017 Central Italy seismic sequences.





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**Figure S4.** Application of the Fractal Theory. Example of the application of the Fractal Theory in the case of the 1997 Colfiorito seismic sequence. The number of earthquakes (logarithmic scale) occurred in certain magnitude ranges is reported in the graphs and the dotted lines represent the simple linear regression.



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