

# Supplementary Materials for: What Is the Effect of Seismic Swarms on Short-Term Seismic Hazard and Gutenberg-Richter b-Value Temporal Variation? Examples from Central Italy, October–November 2023

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**Table S1.** Factor of increase in the OEF probabilities for the three considered catalogs, from the background to both the maximum probability during the swarm current activity, and the maximum probability after the occurrence of the corresponding past strongest events.

|                          |           | To Maximum probability<br>since October 2023 | To Maximum probability<br>after the strongest event<br>experienced since 2005 |
|--------------------------|-----------|--|---|
| <b>Sora</b>              | MMI VI+   | 1.3  | 23.3  |
|                          | MMI VII+  | 1.5  | 25  |
|                          | MMI VIII+ | 1.25   | 25  |
|                          | ML 4+     | 1.5  | 25  |
|                          | ML 5.5+   | 1.5  | 33.3  |
| <b>Monte<br/>Cavallo</b> | MMI VI+   | 1  | 90  |
|                          | MMI VII+  | 2  | 300   |
|                          | MMI VIII+ | 1.3  | 266.6   |
|                          | ML 4+     | 1.1  | 100   |
|                          | ML 5.5+   | 1  | 266.6   |
| <b>Lucoli,<br/>AQ</b>    | MMI VI+   | 3.3  | 133.3   |
|                          | MMI VII+  | 4.4  | 222.2   |
|                          | MMI VIII+ | 4  | 250   |
|                          | ML 4+     | 3.3  | 133.3   |
|                          | ML 5.5+   | 3.5  | 200   |

## Pericolosità sismica di breve termine - Italia

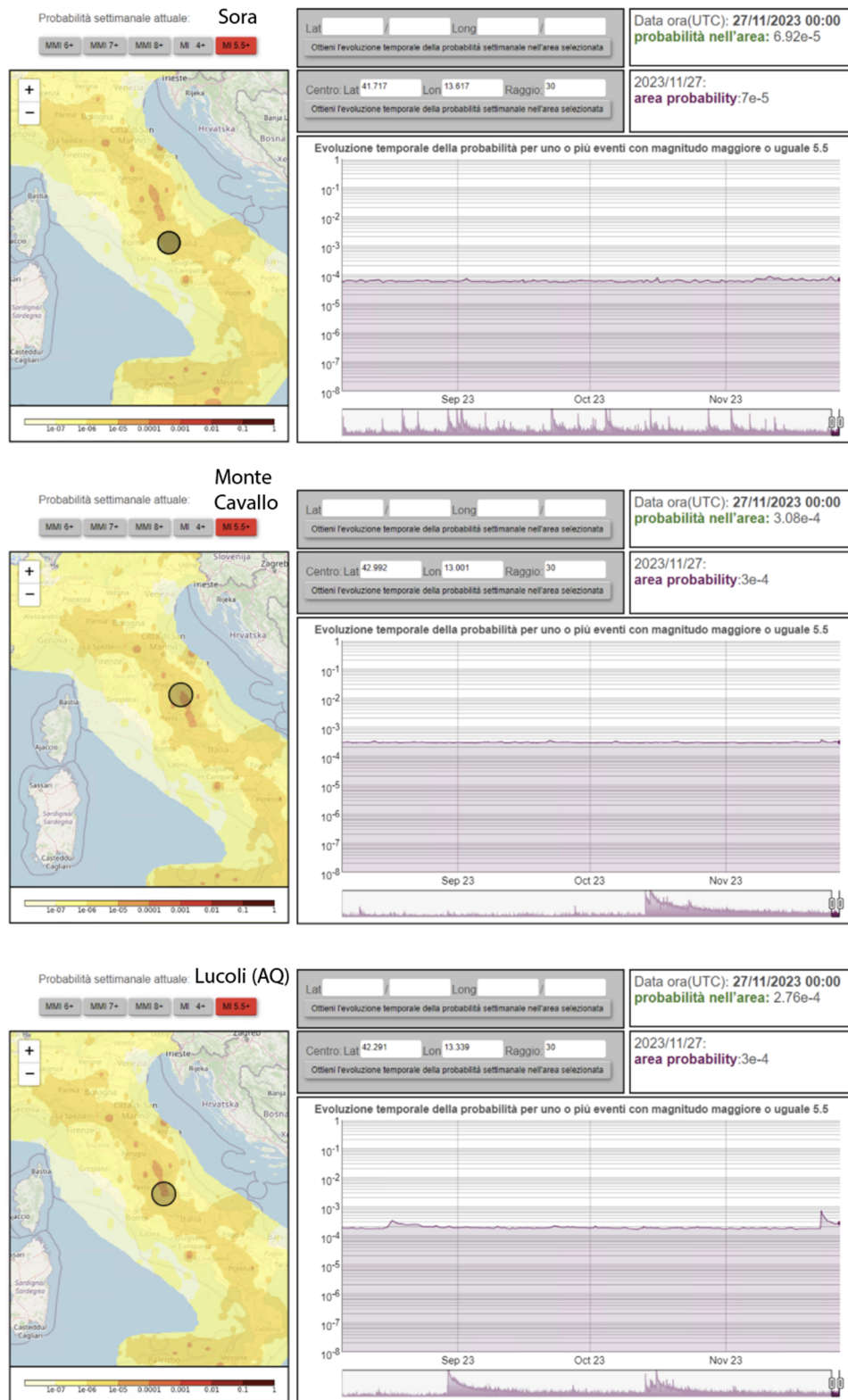


Figure S1: OEF probabilities of ML 5.5+ events: top, middle and bottom panels respectively for Sora, Monte Cavallo and Lucoli catalogs, respectively.

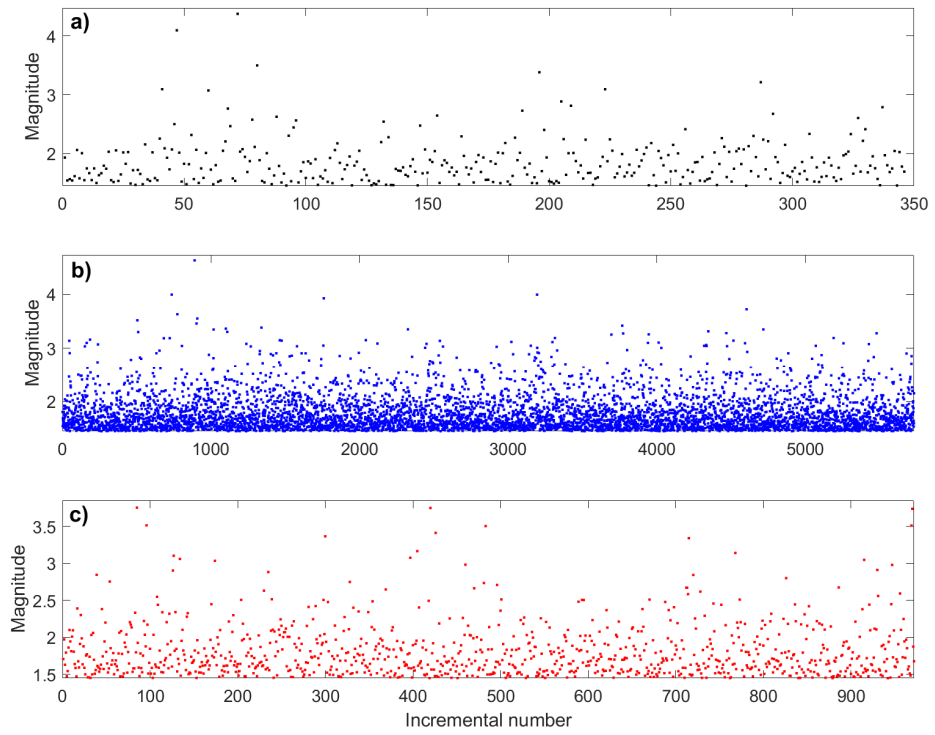


Figure S2: Magnitudes versus sequential number of events: top, middle and bottom panels respectively for Sora, Monte Cavallo and Lucoli catalogs.

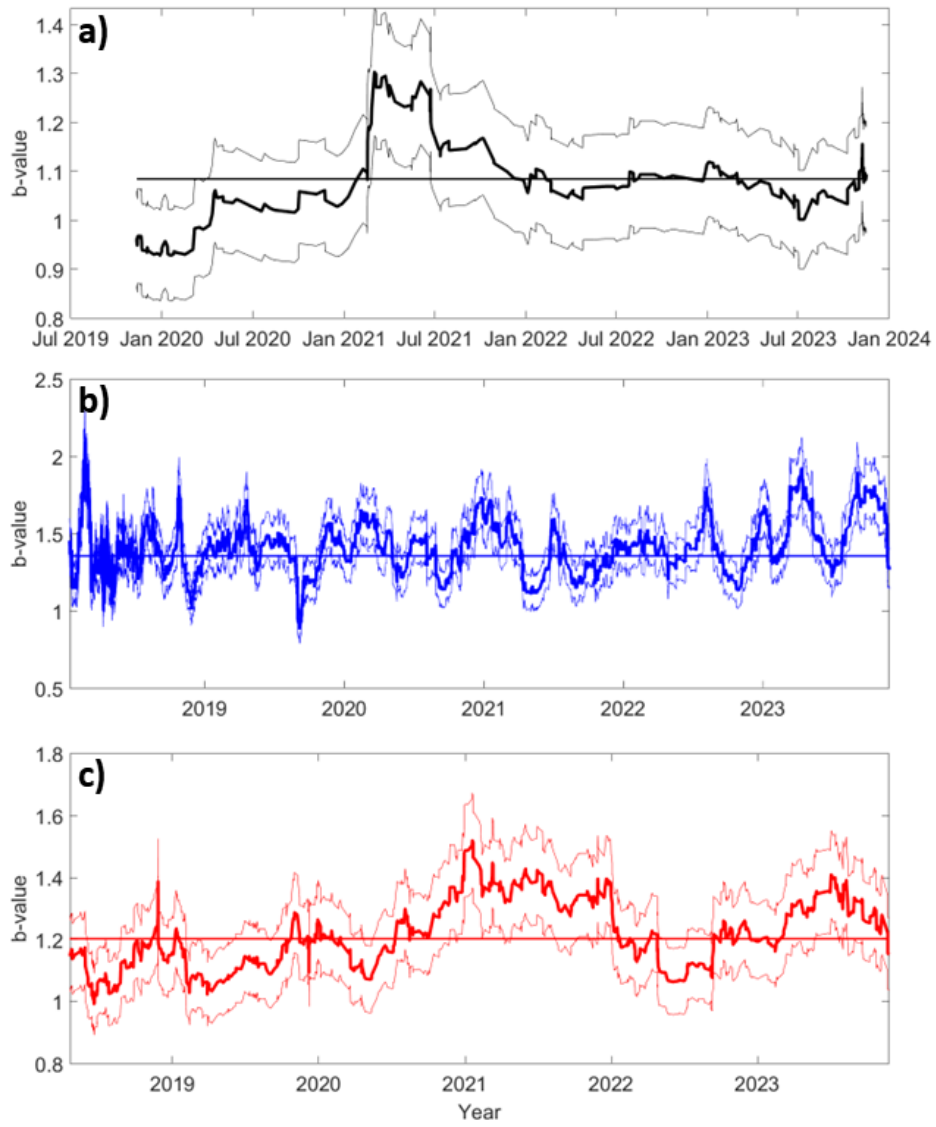


Figure S3: b-value time series (thick lines), with the associated uncertainty ( $\pm \sigma$ , thin lines), estimated by means of a rolling window with a fixed number of 100 events: panels a), b) and c) respectively for Sora, Monte Cavallo and Lucoli catalogs.