



The AMR and the Revised AMR methods as diagnostic tools for the preparatory phases of large earthquakes

Gianfranco Cianchini (1), Angelo De Santis (1,2), and Rita Di Giovambattista (1)

(1) Istituto Nazionale di Geofisica e Vulcanologia, Rome, Italy (rita.digiovambattista@ingv.it), (2) Università degli Studi "Gabriele d'Annunzio", Chieti, Italy

An earthquake is the final manifestation of a long-term process that occurs in the lithosphere, under the continuous stress of plate tectonics, when the system cannot sustain the accumulated strain and most of the potential energy stored during years, decades or even centuries is suddenly released. Periods of accelerated seismicity have been observed during the preparation process of many large earthquakes. This accelerating seismicity can be detected by the Accelerated Moment Release (AMR) method and its recent Revised version (R-AMR) when they are applied to earthquake catalogues.

With the aim of characterizing the seismicity preceding large mainshocks and possibly increase our comprehension of the underlying physics, we applied both the AMR and R-AMR by analysing the seismicity preceding many large worldwide earthquakes occurred from 2014 to 2016. We compare the results from both methods showing their different capability to disclose (or highlight) the acceleration eventually present before the mainshock. This work was done within the ESA-funded project SAFE.