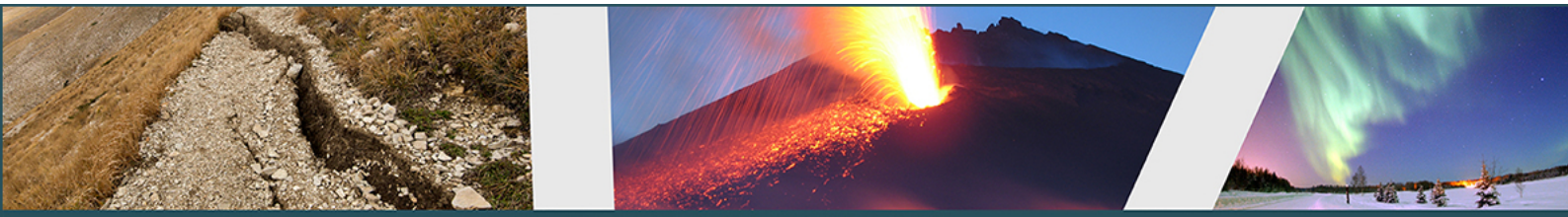

Source complexity of the May 20, 2012, Mw 5.9, Ferrara (Italy) event

Davide Piccinini, Nicola Alessandro Pino, Gilberto Saccorotti

Abstract

A Mw 3.9 foreshock on May 19, 2012, at 23:13 UTC, was followed at 02:03 on May 20, 2012, by a Mw 5.9 earthquake that hit a densely populated area in the Po Plain, west of the city of Ferrara, Italy (Figure 1). Over the subsequent 13 days, six Mw >5 events occurred; of these, the most energetic was a Mw 5.8 earthquake on May 29, 2012, 12 km WSW of the main shock. The tragic balance of this sequence was 17 casualties, hundreds of injured, and severe damage to the historical and cultural heritage of the area. From a seismological point of view, the 2012 earthquake was not an outstanding event in its regional context. The same area was hit in 1996 by a Mw 5.4 earthquake [Selvaggi et al. 2001], and previously in 1986 and in 1967 (DBMI11) [Locati et al. 2011]. The most destructive historical event was the 1570, Imax 8 event, which struck the town of Ferrara [Guidoboni et al. 2007, Rovida et al. 2011]. The 2012 seismic sequence lasted for several weeks and probably developed on a well-known buried thrust fault [Basili et al. 2008, Toscani et al. 2009, DISS Working Group 2010], at depths between 2 km and 10-12 km. [...]

Keywords

Empirical Green's functions; Array analysis

Full Text:

PDF

References

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