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Seismic investigation at the Calabria-Basilicata boundary (South Italy): the in progress Pollino seismic crisis

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A seismic crisis of thousands of small to moderate earthquakes has been occurring since 2010 in the Pollino area at the Calabria-Basilicata boundary (South Italy). In this area, a seismic gap was previously hypothesized on the basis of paleoseismological evidence of magnitude 7 earthquakes associated with the lack of events of this size in the historical and recent catalogs. Activity, that is still in progress at the time of writing of this abstract (January 2013), has shown a slow but progressive increase in terms of earthquake rate and strain release since its beginning. We perform better quality hypocenter locations and waveform inversion focal mechanisms showing that the crisis is most imputable to normal faulting on NNW-trending WSW-dipping dislocation surfaces consistent with the general seismotectonic domain of the southern Apennines. Jointly evaluations of our first results and other large scale evidences (e.g. local geology, shallow tomography) can lead us to interpret the 2010-to-date Pollino activity as seismic deformation occurring at the southern tip of the southern Apennines seismotectonic belt, near the transitional area between the southern Apennines and the Calabrian Arc.
Deeper investigation of the space-time evolution of activity, by using additional data progressively coming from in-situ recording stations managed by different institutions, is in progress. This will allow us to release a larger and improved database of locations and mechanisms that will also help to better investigate the increasing rate and strain release patterns of the crisis, even by comparisons with patterns observed in laboratory experiments and/or in other regions worldwide.