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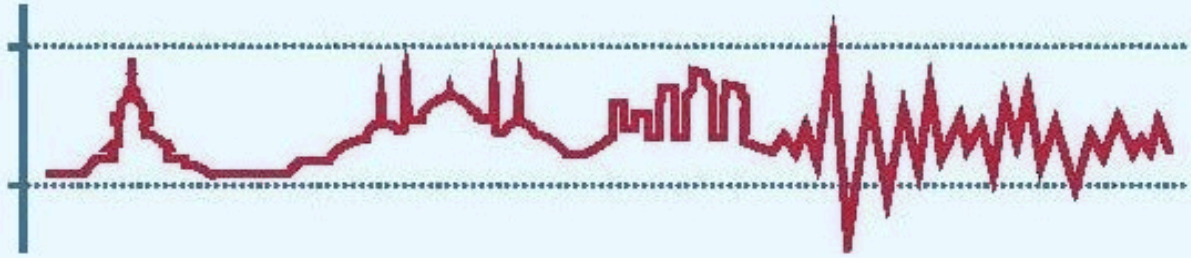

SEISMIC SWARM VS MAINSHOCK-AFTERSHOCKS SEQUENCE:REFINED HYPOCENTERS LOCATIONS AT THE APENNINES-CALABRIAN ARC BOUNDARY (SOUTHERN ITALY)

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In the last years the Apennines-Calabrian arc boundary has been affected by intense seismicity concentrated in the Pollino mountain region. The Pollino is located at the northernmost edge of the Calabrian Arc, the last remnant of subduction along the Africa- Eurasian boundary. The area is subject to Northeast- Southwest extension, which results in a complex system of normal faults striking Northwest-Southeast, nearly parallel to the Apenninic mountain range. The Italian Seismic Network between 2010 and 2014 detected more than 5500 earthquakes in the area (Italian Seismological Instrumental and Parametric Data- Base; http:// iside .rm .ingv .it). In 2010 and 2011 the earthquake rate has been variable, with increasing and decreasing phases and maximum magnitudes below M=4. On May 28th 2012, a shallow event with local magnitude of 4.3 struck, about 5 kilometers east of the previous swarm. The seismic activity remained concentrated in the M=4.3 source region until early August. At that time seismicity jumped back westward to the previous area, with several earthquakes of magnitude larger than 3, culminating with a M=5.0 earthquake on 25 October 2012. The seismic rate remained high for some months, but aftershock magnitudes did not exceed magnitude 3.7. The seismic rate then suddenly decreased at the beginning of 2013 and stayed quite low for the rest of the year up to the beginning of 2014. During these years several temporary seismic stations were deployed in the area, improving the detecting threshold of the Italian Seismic Network and giving us the opportunity to refine the location of the earthquakes hypocenters. A combined dataset, including three-component seismic waveforms recorded by both permanent and temporary stations, has been analyzed in order to obtain an appropriate 1-D and 3D velocity model for earthquake location in the

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study area. Here we describe the main seismological characteristics of this seismic sequence and, relying on refined earthquakes location, we make inferences on the geometry of the fault system responsible for the two strongest shocks. Swarm activity seems to occur on a diffuse crustal volume more than on fault planes. To yield a better understanding of the origin of the ongoing seismic activity in the Pollino area, using thousand of seismograms, we analyze vp and vp/vs models and anisotropic parameters in the crust. The main goal of this study is to increase the understanding of the physical mechanisms behind the seismic swarm and its influence on the seismic hazard of the Apennines-Calabrian arc boundary region.