



## **New insights on seismicity pattern in the Lucanian Apennines (Southern Italy) and minimum 1D velocity model.**

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We analyzed the seismicity of Southern Italy in the area including Lucanian Apennines and Bradano foredeep, making use of the most recent seismological data base available so far. We re-picked P- and S-wave arrival times recorded by the Italian National Seismic Network (RSNC), operated by the Istituto Nazionale di Geofisica e Vulcanologia (INGV), the SAPTEX temporary array (2001-2004), and the local Eni-Agip seismic network located in the upper Agri Valley. We examined the seismicity of this area in the period between 2001 and 2006, considering events that have magnitudes greater than 2.0. Firstly, we computed the  $V_P/V_S$  ratio using a modified Wadati method, obtaining a value of 1.83. Secondly, through the use of the Velest code, we carried out an analysis for the one-dimensional (1D) velocity model that approximates the seismic structure of the study area. We relocated the earthquakes and for well recorded events we also computed the focal mechanisms. The denser station coverage allows us to obtain improved hypocenters with respect to those obtained by using only RSNC data. The distribution of events shows two main different domains: the westernmost characterizing the chain, mostly with shallow earthquakes, and the easternmost below the Bradano foredeep, with deeper seismicity. Fault-plane solutions were used for stress inversion. The results of this analysis are consistent with the hypothesis that the Lucanian Apennines is generally characterized by NE-SW extension.