

Evidence of Apulian crustal structures related to low energy seismicity (Murge - Southern Italy)

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Abstract

The discovery of recent co-seismic sedimentary structures and the detection of low energy seismic activity in the Murcian plateau (Apulia - Southern Italy) motivated a more detailed examination of the tectonics in this part of the Apulian plate commonly believed to be aseismic. In particular, we examined the north-western zone where a seismic sequence with maximum magnitude 3.2 and tensional focal mechanism occurred in 1991. The analysis of the existing gravimetric data, integrated by three new profiles carried out across the epicentral area, disclosed an anomaly possibly due to an old tensional tectonic structure located within the upper crust. Even though the depth and the age hypothesised for the anomaly source would exclude a direct causal connection with the observed seismicity, this structure could be a shallower expression of a tectonic structure extending down to the crystalline basement: it could represent a zone of relative «weakness» where the regional stress, due to the interactions between Apennines and Apulian plate, encounters conditions facilitating the release of seismic energy.

Keywords

Bouguer anomalies; Murcian plateau; low energy seismicity; tensional structures

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References

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
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