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Sesimological features of the Central and South Dobrogea

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In the present paper, authors approached a seismotectonic study of the Dobrogean sector (eastern area) of the Moesian Platform; they analysed the 958 seismic events for 1872-2006 period, recorded at the following seismological stations: Tirgusor (TIRR), Harsova (HARR), Carcaliu (CFR), TLCR(Tulcea), VRI(Vrancioaia), MLR(Muntele Rosu) and ISR(Istrita), also they used data from K2 stations from Manastirea Sf. Andrei and Mangalia locations. They highlight a new seismogenetic area in the eastern part of Central Dobrogea (North-East of Medgidia city), and emphasize the active character of the Horia -Pantelimonu de Sus fault.

After the installations of the TIRR broadband stations and Sf. Andrei and Mangalia K2 stations, the quality of the data improved and we already have recorded more than 150 new seismic events. More of them, 83, are situated in the prolongation of faults which framing the Medgidia city, to the west and east, respectively. 20 earthquakes are situated along Horia -Pantelimonu de Sus fault. We eliminated around 15 seismic events which are situated in/or nearby quarry or the depth is 0 km. The depths of the foci are situated in 1-15 km domain. The largest earthquake have M_w=3.6. In a 3-D representation of the hypocenters, easily seen that are two alignments of foci along faults which framing the Medgidia city and their prolongations north of Capidava-Ovidiu fault. These two alignments join north of Constanta city, and becomes a transversal faults.

A first remark is the intense seismic activity of the Dobrogean sector of the Moesian Platform in comparison with the Wallachian sector, especially in the lithospheric

blocks around of the Capidava-Ovidiu faults. The seismic foci were mostly situated in the sedimentary crust or in the upper part of the crystalline crust; few earthquakes appear in the lower part of the crust or in the subcrustal domain. Concerning the focal mechanism indicated two faulting systems one with NW-SE direction, and other, NE-SW oriented. From first category we mention the following principal active faults: Capidava-Ovidiu and Horia-Pantelimonu de Sus faults.