



Detailed seismicity analysis in the SE of Romania (Dobrogea region)

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The purpose of this paper is to analyze the seismicity in the south-eastern part of Romania, in the Dobrogea region (namely the Predobrogean Depression and Black Sea area). Predobrogean Depression is the name attributed to the structures belonging to the Scythian Platform. The seismic activity is moderate with most significant earthquakes at the boundary between the North Dobrogea Orogen and Scythian Platform (Sf. Gheorghe fault). The largest magnitude event was recorded in 02.11.1871 ($M_w = 5.3$). Other events with magnitude above 4 were observed close to Tulcea city (13.11.1981, $M_w = 5.1$, 03.09.204, $M_w = 5.1$) and Galati city (11.09.1980, $M_w = 4.2$). Recently, an earthquake swarm of 406 events extended over two months and a half (23 September – 5 December 2013) was produced in the Galati area (maximum magnitude 3.9). The deformation field has an extensional regime, as resulted from fault plane solutions and geotectonic investigations. The maximum expected magnitude in this area is estimated at $M_w = 5.5$.

The seismic activity in the Black Sea area, close to Romania seashore and north-east Bulgarian seashore, concentrates along Shabla fault system. Large shocks (magnitude above 7) are reported here at intervals of a few centuries. The most recent major shock was recorded on 31 January 1901 ($M_w = 7.2$) in Shabla region, Bulgaria. To characterize seismicity parameters, the Romanian catalogue of the National Institute of Earth Physics was used as a basic input. The catalogue was revised as concerns historical information by reanalyzing macroseismic data and for the recent events, by applying up-to-date tools to relocate and re-parametrize the seismic sources.