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Analysis of potential seismic sources of tsunamis in the Black Sea region, using data from various catalogues

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Low-laying territories along the Black Sea coastal line are more vulnerable to the possible high (long) waves due to tsunami events caused by strong earthquakes in the active seismic regions. Historically, such events are rare in the Black Sea region, despite some scientific evidence of tsunamis and their recordings through continuous sea-level observations with tide gauges built in certain places along the coast. This study analyses seismic data derived from different international earthquake catalogues - NEIC, ISC, EMSC, IDC and Bulgarian national catalogue (1981 - 2019). A catalogue of earthquakes within the period covering the historical to the contemporary seismicity with magnitudes $M \geq 3$ is compiled. The data are processed applying the software package ZMAP, developed by Stefan Wiemer (<http://www.seismo.ethz.ch/en/research-and-teaching/products-software/software/ZMAP/index.html>). The catalogues' completeness is calculated to assess the reliability of the historical data needed to assess the risk of rare tsunami events. The prevailing part of the earthquakes' epicentres are in the seismically active regions of Shabla, the Crimean peninsula, the east and southeast coast of the Black Sea forming six main clusters, which confirmed previous studies in the region. In these areas, several active and potentially active faults, which can generate tsunamigenic seismic events, are recognized.

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