



Contribution ID: 116

Type: Zamestnanci fyzika

Research on historical earthquakes in Eastern Slovakia

Wednesday, November 26, 2025 3:40 PM (1 minute)

On Monday, October 9, 2023, 20:23 CEST, an earthquake with a local magnitude of 4.9 occurred in Eastern Slovakia with an epicenter near the village of Ďapalovce. The epicentral macroseismic intensity reached 8° EMS-98. It was the strongest earthquake on the territory of Slovakia in more than 100 years (since earthquake on the night of January 9-10, 1906 near the municipality Dobrá Voda, nowadays Trnava region). The macroseismic effects were reported from more than 540 municipalities and damage was verified to 80 sites.

Looking at the earthquake catalogue for the territory of Slovakia, the location of the epicenter and the magnitude of October 9, 2023 earthquake are not surprising in terms of the historical seismic activity of the Vranov nad Topľou and Humenné regions (a series of three earthquakes between 1778-1779 with a magnitude of around 5.0, earthquakes in 1885, 1890, 1893, 1914, 1932, 1941 with magnitudes between 4.5 and 5.0). The 2023 earthquake undoubtedly contributed to the increased interest in studying the historical and recent seismic activity of eastern Slovakia and raised the need to update the seismic hazard map of the territory of Slovakia.

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Session Classification: Poster session + káva: prezentácie vedeckých výsledkov FMFI UK Zamestnanci Fyzika

Track Classification: Poster session + káva: prezentácie vedeckých výsledkov FMFI UK Zamestnanci: Poster session + káva: prezentácie vedeckých výsledkov FMFI UK Zamestnanci Fyzika