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## Tsunami research in Bulgaria: recent developments, gaps and further directions

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Tsunamis are severe natural hazards, causing significant human casualties and material damage to infrastructure, especially in the coastal zone. Research shows that tsunami danger exists for any water basin. The Black Sea is an inland sea, surrounded and crossed by several active faults whose geodynamic characteristics indicate that they can generate a tsunami. Moreover, the Black Sea is also prone to landslide-generated tsunamis and meteotsunamis. Until five decades ago, the existence of a tsunami threat in the Black Sea was ignored until the appearance of books that mention events described by ancient chroniclers interpreting information about tsunami-related phenomena in historical documents.

This work reviews and systematizes the main achievements in the field of tsunami research in Bulgaria from the initial voluntary enthusiastic research, initiated through the FP4-ENV 2C funded project "Genesis and impact of the tsunami on the European coasts" (GITEC-TWO, 1996-1998; <https://cordis.europa.eu/project/id/ENV4960297>) up to the present days. The small number of tsunami events observed in the western Black Sea basin limits our knowledge of the tsunamigenic potential of the Black Sea. The main problems, omissions and challenges are related to establishing the characteristics of tsunami sources, such as kinematic parameters of active faults and their geometry, coastal and underwater landslides and special weather conditions inducing meteotsunamis. This review presents the actions, studies, and observations on the western Black Sea coast, the first steps in building a tsunami warning system and other related activities. Based on the collected information, we identify the research gaps according to the AGITHAR priority matrix (Behrens et al., 2021) and highlight the emerging research areas in the Black Sea basin. The possibility of proposing a framework for assessing multi-hazard and multi-risk due to the cascade effect of different hazards along the Bulgarian coast in the context of the Sendai Framework for Disaster Risk Reduction is also outlined.

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