Exploring the Mediterranean tsunami research landscape: scientometric insights and future prospects

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Abstract	BackgroundThe Mediterranean Sea is a region characterized by high seismic activity, with at least 200 tsunami events recorded from the fourth century to the present twenty-first century. Numerous studies have been conducted to understand past tsunami events, earthquake-tsunami generation, tsunami recurrence periods, tsunami vulnerability zones, and tsunami hazard mitigation strategies. Therefore, gaining insights into future trends and opportunities in Mediterranean Sea tsunami research is crucial for significantly contributing to all relevant aspects. This study aims to assess such trends and opportunities through a scientometric analysis of publications indexed by Web of Science from 2000 to 2023.ResultsBased on a selection of 329 publications, including research articles, review articles, book chapters, and conference papers, published between 2000 and 2023, Italy has the highest number of publications and citations in this field. The number of publications has increased significantly, especially after the 2004 Indian Ocean, 2011 Tohoku, and 2018 Palu tsunamis. According to the keyword analysis, the terms "tsunami", "earthquake", "hazard", "wave", "Mediterranean", "coast", and "tectonic" were the most frequently used in these publications. Research themes consist of four classifications: motor themes, such as seismic hazard; specific but well-developed themes, like tsunamiite; emerging or disappearing themes, for example, climate change; and general or basic themes, such as equations and megaturbidite. The number of publications related to the motor theme classification continued to grow throughout 2000-2023. Topics from 2011-2023 are more complex compared to 2000-2010, characterized by the emergence of new keywords such as evacuation planning, risk reduction, risk mitigation, building vulnerability, coastal vulnerability, climate change, probabilistic tsunami hazard assessment (PTVA-3 and PTVA-4). However, topics that were popular in the 2000-2010 period (e.g., paleotsunami deposits, earthquake, and tsunami propagation analysis) also increased in 2011-2023.ConclusionsResearch topics with high centrality and density such as seismic hazard will continue to develop and prospect. The cluster network of this topic includes seismoturbidites, sedimentary features, tsunami modeling, active faults, catalog, and historical earthquakes.
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