

Geo-INQUIRE installation: [PTHA - Probabilistic Tsunami Hazard Assessment \(TA2-541-6/TA2-541-7/TA2-541-8\)](#)

Project title: Probabilistic Tsunami Hazard Assessment for Rabat-Salé and Casablanca cities, Morocco: A High-Performance Computing Approach.

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Project acronym: PTHA-HPC-AM

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Date of visit: 08 - 12 September 2025

Geo-INQUIRE Virtual Access:

Data/Products: Data/products are currently in preparation and will be finalized once all inputs are validated.

Project report:

The Atlantic coast of Morocco is exposed to potential tsunami events generated by offshore seismic sources. While several previous studies have evaluated tsunami hazard along the Moroccan coastline, they have mainly relied on deterministic approaches. In this project, we adopt a Probabilistic Tsunami Hazard Assessment (PTHA) methodology for the Rabat–Salé and Casablanca regions, supported by high-performance computing resources.

During this first phase, the work has focused on establishing the foundations necessary for scenario-based tsunami simulations. The visit (8–12 September 2025) was dedicated to defining the PTHA workflow, clarifying the project scope, discussing and selecting the computational grids, and preparing a detailed workflow for the subsequent modelling stages.

Based on disaggregation results from the NEAMTHM18 v1.0 probabilistic hazard model, eight Points of Interest (POIs) were identified across the two study areas, corresponding to the 99% disaggregation level and thresholds of 0.3, 0.5, 1, 4, and 8 meters maximum inundation height.

Using these POIs, a comprehensive set of 39,940 earthquake scenarios was generated, covering multiple source categories and representing the full range of potentially tsunamigenic events relevant for the region. During the visit, preliminary tests were conducted to verify the workflow, inspect the input structure, and ensure compatibility for large-scale simulations.

The complete dataset necessary for the full set of computations has only recently been received and is currently being processed and validated. The next steps will involve finalizing the data products and running the full suite of tsunami simulations. The planned outputs include local hazard curves and probabilistic inundation maps, which will support risk-informed coastal planning and decision-making.

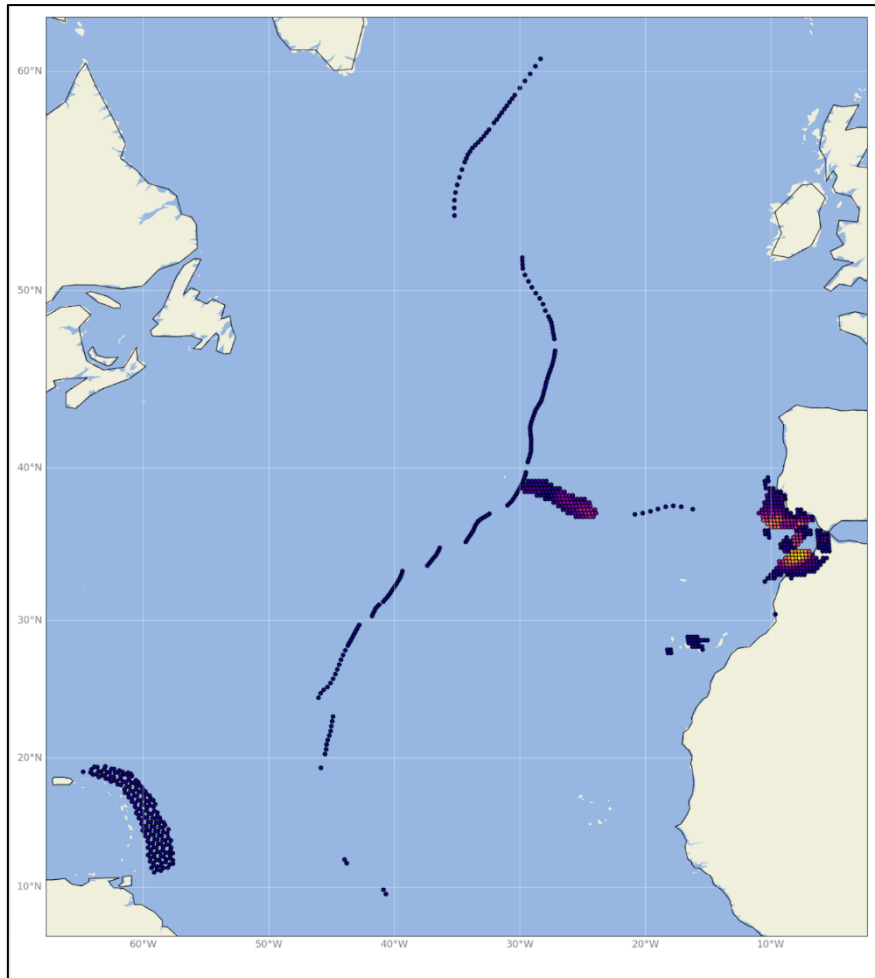


Figure: Distribution of seismic sources based on the disaggregation results from NEAMTHM18 v1.0 for the Rabat–Salé and Casablanca regions