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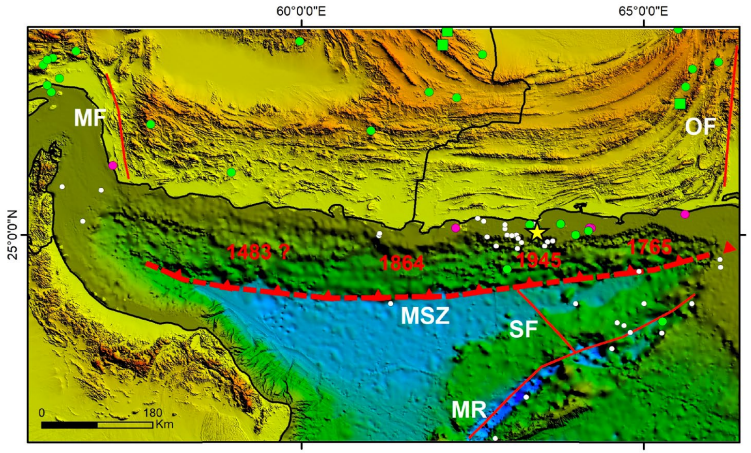
University of Hormozgan

ICG/IOTWMS Task Team on

"Scientific Tsunami Hazard Assessment of the Makran Subduction Zone"

Strengthening tsunami early warning in the North West Indian Ocean through regional cooperation

9th November 2021



Mohammad Mokhtari

Chair of NWIO-WG at IOC/IGC UNESCO

Leader of the IGCP 740 West Makran Plaeotsunami project

Framework for the development of a unified Probabilistic Tsunami Hazard Assessment for seismic sources (S-PTHA) for the NWIO region

Project Objective

Better understanding of the risk knowledge based on scientific research

Outcomes:

- Availability of latest scientific insights on the tsunami hazard from the MSZ as an input for risk assessment activities in the countries
- Concept and inputs for a unified regional tsunami hazard map.

Outputs:

• Gap analysis and strategy for regional cooperation to develop a unified regional tsunami hazard map developed by a NWIO working group on risk knowledge.

• Results from studies on critical issues such as maximum magnitude and source mechanism for tsunami modelling implemented by international scientific partner institutions

• Exchange of latest scientific results and studies from international studies on the tsunami hazard in the MSZ

Performance Indicators:

• Presentations of results from studies on critical issues as prioritized by the Regional Working Group at the regional science meeting

• Availability of a concept note for developing a unified regional hazard map by the Regional Working Group

STEP-1 of PTHA: Development of community seismo-tectonic model for the NWIO region

STEP-2 of PTHA: Tsunami generation and propagation in deep water

STEP-3 of PTHA: Shoaling and Inundation

STEP-4 of PTHA: Probabilistic calculations

Expert subdivision on Unified Tsunami Hazard Assessment of the Makran Subduction Zone

- Expert Team 1 to develop a community seismo-tectonic model for the Makran region to be used for the unified PTHA. The main outcome should be a catalogue of all representative tsunamigenic seismic scenarios with recurrence rates

- Expert Team 2 to consider and identify tsunami propagation models, existing and required data sets, amplification factors, etc., to be used for the unified PTHA and future inundation modelling.

- Expert Team 3 to provide guidance on inclusion of tsunamis generated by non-seismic effects such as landslides, mud volcanoes, splay faults,..etc. and inclusion of Red Sea and Persian Gulf in the proposed PTHA framework, or through other measures to inform risk assessments and decision.