



ISTITUTO NAZIONALE
DI GEOFISICA E VULCANOLOGIA



Global Tsunami Model (GTM)

Present status and look ahead

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Goals and actions for GTM

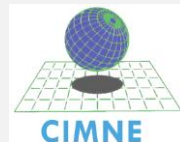
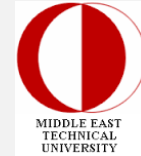


The GTM overall vision and goals are to collaboratively achieve a thorough understanding of tsunami hazard and risk, together with the processes that drive them.

- Facilitate compatibility and improve **probabilistic tsunami hazard and risk analysis methods** through the development of **standards, guidelines, methods, tools**, and identification of key research questions
- The constitution of **reference pools of experts** for completing and reviewing tsunami hazard and risk assessments
- The development of regional and global **reference probabilistic tsunami hazard and risk maps**, as well as **standardized processes for developing local hazard and risk analyses**
- The provision of a **consistent input and contribution to multi-hazard risk assessment** through high-level harmonization with organizations covering other natural hazards
- The interaction with stakeholders to ensure relevance and proper dissemination of results and **uncertainty communication to non-scientists**
- To develop the above products while **being mindful of their benefits for society**

GTM structure : Organisation under development

- GTM proposed to the tsunami community June 2015, discussed among partners in several meetings since
- Decision to form taken at AGU fall meeting December 2016
- **Loose structure committing partners to the GTM through signing of Letter of Interest (LoI's)**
- **18 partners have signed LoI's, more than 30 partners interested (involved in meetings etc)**
- Main proponents and organisers – INGV and NGI receives LoI's on behalf of GTM and perform majority of secretary work



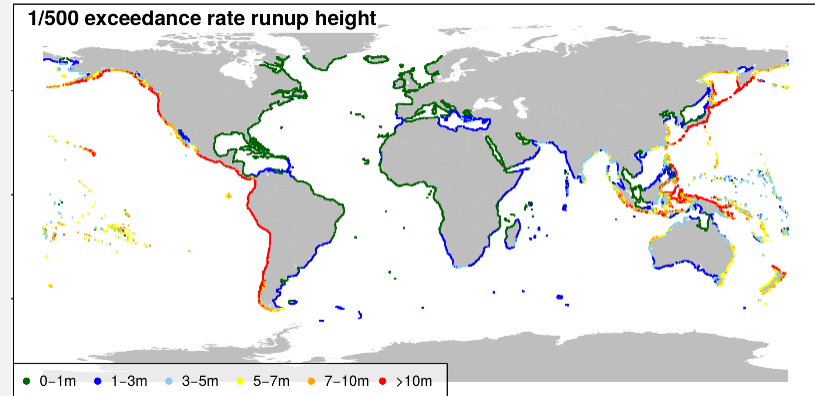
Main GTM drivers / stakeholders

- The tsunami hazard and risk discipline is young and needs to adapt to address recent unanticipated consequences of tsunamis
- We are currently lacking well established procedures, methods and standards
- The majority of the tsunami hazard and risk community contributes to GTM over a broad technical range
- Relevant knowledge on dealing with a low frequency / high consequence hazard that differs from most other natural hazards
- Societal relevance and endorsement from UNISDR and GFDRR

Common grounds and first products for GTM



- GAR15
- TSUMAPS-NEAM
 - tsunami hazard maps related to DG-ECHO
 - GTM pool of experts
- New global tsunami hazard assessment finalized
- Guidelines
 - UNISDR Words into action
 - DRMKC on understanding risk



Future aspirations

- ↗ Seismic source (probability and modeling) – interface with GEM foreseen
- ↗ Non Seismic source (probability and modeling) – interface with other global models covering sources such as GVM (volcanoes), ICL (onshore landslides), S4Slide (submarine landslides)
- ↗ Tsunami (probability and modelling)
- ↗ Probabilistic Tsunami Hazard Assessment, PTHA
 - Earthquakes
 - Non-earthquake sources
- ↗ Vulnerability and fragility
- ↗ Probabilistic Tsunami Risk Assessment
- ↗ Uncertainty treatment and feasibility
- ↗ Development of standards and guidelines for tsunami hazard and risk quantification
- ↗ Unified code interfaces - harmonization
- ↗ Dissemination and geoehtics (transparency – uncertainty communication)

Key stakeholders

- ↪ Present endorsers
 - Global agencies such as the UN (UNISDR, GFDRR)
- ↪ Possible other stakeholders
 - IOC UNESCO
 - Industry stakeholders such as the re-insurance (some contact have been held with OASIS)
 - National stakeholders
 - Regional stakeholders (EU, NTHMP US)
- ↪ Additional contact will be taken when the key challenges related to tsunami hazard and risk assessment is formulated

Main technical benefit and barriers

- We don't see any technical barriers terms of working in a multihazard framework
- It is a reciprocal benefit to work on tsunami sources that are in common with other organizations, earthquakes, volcanoes, landslides
- To work together on a specific site or area is valuable
- Our main barrier is that we are still forming the organization and are dependent on funding