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► To cite this version:

Monique Terrier, Anne Lemoine. Study of the possible tsunamigenic seismic sources for the French coast (Atlantic facade and English Channel). 35th International Geological Congress : IGC 2016, Aug 2016, Cape Town, South Africa. 2016.

HAL Id: hal-01314299

<https://hal-brgm.archives-ouvertes.fr/hal-01314299>

Submitted on 11 May 2016

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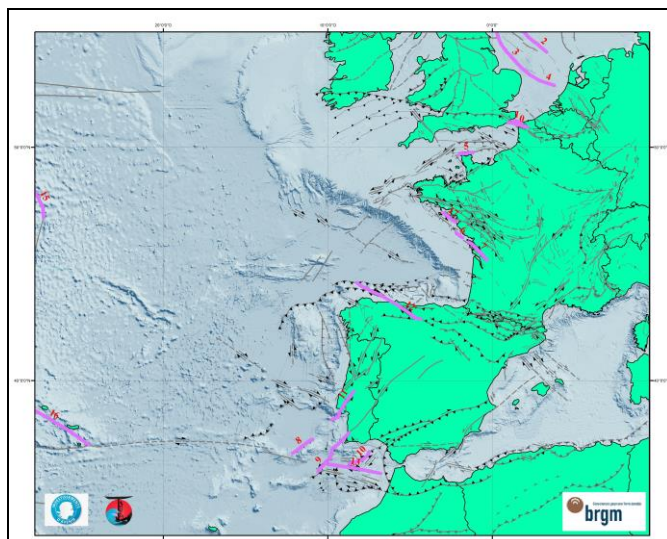
Study of the possible tsunamigenic seismic sources for the French coast (Atlantic facade and English Channel)

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This study is part of the Tandem project (Tsunamis in the Atlantic and the English Channel: Definition of the Effects through numerical Modeling, 2014-2018), dedicated to the appraisal of coastal effects due to tsunami waves on the French coastlines. Within this framework, the present abstract concerns 1) the inventory of the possible seismic sources located between the Celtic Sea and the Cadix gulf and 2) the proposal of the worst-case source scenarios.

The study gathered and analysed a large number of information sources (databases, publications, maps) necessary for the realization of a seismotectonic synthesis of this part of the western area of the European plate. The map of active or potentially active faults is accompanied by a table of information indicating: the geometry of the fault system (segmentation, length, dip), its geological features, earthquakes attached to the structure, the current kinematics (movement type, strain rate), the main bibliographical references.



From this seismotectonic synthesis, several scenarios for the simulation of tsunami have been chosen according to the size of the seismic sources (sufficient to generate at least 6-magnitude earthquakes), their location (at sea), and their current activity. The scenarios of seismic rupture proposed are, a priori, the most penalizing for the French Coast along the Atlantic facade and English channel.

Figure 1 - Selected seismic sources (line in purple) for the assessment of the tsunami susceptibility of the French Atlantic coast and English channel

Each zone is characterized by: 1) the nature of the movement, 2) the major earthquakes associated with the structure, 3) the rate of deformation, 4) the maximum possible magnitude estimated on the basis of the paleoseismic data and/or on the geometry of the fault, 5) the geometry of the coseismic rupture for the estimated maximum magnitude (and corresponding uncertainties).

The first modelling results are presented. Upcoming results for this part of the Tandem project will concern the interpretation of the results in terms of susceptibility of the French coast to tsunamis generated by seismic ruptures.