



# Assessing earthquake and tsunami hazard: a geological perspective

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*Earthquakes and Tsunamis are a serious threat for a large part of the Mediterranean area. Knowledge about location, extent, characteristics and frequency of these events in the past is critical to reduce risk in the future; in fact these are important input for scenario modeling and probabilistic tsunami hazard assessment. Historical catalogues are a primary source to retrieve these data as they contain precious information about earthquakes and tsunamis. However, they are always limited to a short interval of time and to densely populated areas. To overcome this limitation these can be integrated with geological data. Stratigraphy and tectonic structures can be read as a book describing geological events, among them earthquakes and tsunamis.*

*This is possible because earthquakes and tsunamis leave their signatures in the geological record; these signatures represent exceptional events in the record. The observation of earthquake and tsunami surface effects during the past century, has allowed defining a number of coseismic effects that represent the occurrence of an earthquake in the past. The extent of these effects, their characteristics and relations with an active fault allow not only to define the occurrence and age of an event but also to define its size.*

*This science is generally referred to as paleoseismology and when integrated to historical seismology and archaeoseismology contributes to a longer reconstruction of the seismic history of a fault/region. The paleoseismological approach is based on a multidisciplinary integration of disciplines that includes Quaternary geology, tectonic geomorphology, geochronology, high-resolution geophysics and so on.*

**Jeudi 4 avril 2013 à 11h**  
**Salle de conférences d'ISTerre**

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