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# Field evidence in Punta Caino, Basilicata coast (Southern Italy), of the tsunami triggered by the 8 September 1905 Calabria earthquake

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## Abstract

On 8 September 1905, a  $M_I=7.9$  or  $M_s=7.47$  seismic event (Galli and Molin, 2009) occurred in Calabria, Southern Italy. The location and geometry of the seismic source are still debated, however, several environmental damage spread for many Km has been reported (Porfido et al., 2011). The earthquake produced many victims and injured people, causing primary effects in the natural environment (landslides and liquefaction), and secondary effects according to the ESI2007 Scale (Porfido et al., 2011). Among the secondary effects of the 1905 Earthquake a tsunami has been reported, which hit the entire area spanning from Civitavecchia to Messina.

The study area is located in Punta Caino (Basilicata Region), few tens of km northward from Scalea, where a wave elevation of 1-2 m and an observed penetration of 30 m has been reported.

In this study, a sample of biocalcarene bearing vermetids, marine sessile gastropods, have been collected on a marine tectonically raised terrace standing few tens of meters above sea level. The sample has been dated using a carbon-14 dating method providing an age which is in line with the 1905 Calabria Earthquake.

The study evidenced the 1905 Calabria Earthquake inundated also the Basilicata coast suggesting an in-depth analysis in order to better define the distribution of past tsunamis triggered by earthquakes in South Italy to increase in the population the awareness about that kind of risk.

## References

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