



Risk analysis and perception of an hypothetical volcanogenic tsunami along the Tyrrhenian coast of Calabria (Southern Italy)

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The Marsili volcano is the largest and active seamount in Europe, located in the Marsili Basin back-arc basin (Aeolian Arc, Italy). Its flanks are unstable and a large collapse could originate a disastrous tsunami that will strike the tyrrhenian coasts of Southern Italy.

In this work we used a GIS methodology in order to calculate the tsunami travel time starting from Marsili volcano, in particular the time that the wave needs to arrive on the tyrrhenian coasts of Calabria (South Italy). Although, we made a qualitative risk perception analysis by distributing a questionnaire at the population from different parts of Calabria. As a result, we obtained a tsunami travel time of 20-25 minutes for almost all the Calabria coasts and a tsunami celerity above the normal because of the great sea depth near the analysed coasts. The majority of the population declare to know the meaning of "tsunami" and a great number of them retain to be affected by a tsunami risk in the place where they live, but they are not instructed about this risk. A great quantity of people links the tsunami generation to a submarine volcanic eruption.

In conclusion, by looking at the tsunami travel time calculated through GIS, the installation of an alert system need along the tyrrhenian coast of Calabria, with an alert advise of around 10 minutes and an evacuation plan of 10 minutes. More integration within GIS and the questionnaire data needs in order to create right evacuation plans and to conduct formative activities for each area.