



Historic Tsunami Risk Scenarios – A reassessment of the largest mega-tsunamis in human history under today’s conditions

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Tsunamis are a rare, but devastating natural disaster type. Many places in the world already experienced mega tsunamis as in 2004 in the Indian Ocean or 2011 in Japan. However, there are many more, much older events of comparable intensity which took places centuries ago which have been in part forgotten. A potential reoccurrence of similar successor events may severely affect the local and far-field coast lines. Thus, it is necessary to reassess the potential impact of those in regards of the inundation and wave propagation pattern but also their expected social and economic losses.

For that purpose some of the most disastrous historic events for which sufficient historic evidence was found are remodeled and losses are computed on the basis of today’s exposure and infrastructure. Potential variability in regards of magnitude, location and slip distribution are considered to provide a probability range for various loss metrics. These events include the tsunamis of Cascadia, 1700, Lima 1746, Mexico 1787, Crete 365 and many more. This collection of historic risk scenarios helps to identify potential worst-case scenarios within the historic context of a region.