



Historical and Recent Earthquakes in the South-Eastern Alps

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The South-Eastern Alps is a densely populated area, characterized by a medium seismicity: past and recent. The deepened study of these historical and recent earthquakes could be a focus for seismic risk analysis.

The possibility to increase the knowledge about causative seismogenic sources of the most destructive historical events of a region will help to modify or validate the existing emergency plans based on seismic risk and hazard studies. This study is focused on the identification of the seismogenic sources of historical and recent events of this region comparing calculated and observed intensity values. In particular the studied events are a selection of the strongest and destructive recent and historical occurred in the area of study: Asolo (1695), Belluno (1873), Cansiglio (1936), Idrija (1511), Gemona (1976), Maniago (1776), Salò (1901), Tramonti (1794) and Villach (1348) and three small events occurred in Tirol: Hall in Tirol (1670), Innsbruck (1572) and Innsbruck (1689). The calculated intensity values are obtained converting peak ground velocity values with an appropriate GMICE, recently estimated. These peak ground parameters are calculated from synthetic seismograms using different seismic moment distributions and different nucleation points. The synthetic seismograms, at the basis of our computations, are calculated using the multi-modal summation technique and a kinematic approach for extended sources.

Comparing the calculated and the observed intensity values we evaluate the most probable causative fault, seismic moment distribution and nucleation point position of all the studied events. Using the found most probable causative faults for each event we present a map of the highest peak ground velocity and calculated intensity values of the region, that could help to increase the knowledge of the seismogenic sources of this complex area.