



Site characterization in central Italy: the case of the Amatrice (IT.AMT) accelerometric station

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During the Mw 6.0 Amatrice earthquake, which struck Central Italy on the 24th August 2016, the accelerometric station AMT, located at about 10km from the epicentre recorded the highest values of the ground motion (Peak Ground Acceleration of the east component reached 0.87 g). To understand the role played by the site effects in the ground motion observed at AMT, we performed a detailed geological - geotechnical characterization of the site. First, geological field investigations were carried out and used to define a detailed geological cross-section intercepting AMT station. Then, aiming at constraining the Vs model, a continuous coring borehole was drilled close to the AMT site and a down-hole test was consequently executed in order to define the shear-wave velocity profile. In addition, MASW and several noise measurements were realized for better constraining the model and evaluating any eventual geological variability along the cross-section. Finally, numerical analyses of seismic site response were carried out using both 1D and 2D approaches including linear equivalent models. In parallel, several analysis were also performed on seismic records, to infer empirical amplification functions, used to compare the results of the numerical simulations

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