

Amatrice Earthquake, Italy, of August 24, 2016

On August 24, 2016, at 3:36 AM (local time), a magnitude 6 earthquake struck Central Italy, producing extensive damage and killing more than 270 people in several municipalities of the Lazio, Umbria and Marche regions. The Figure 1 shows a map prepared by the Istituto Nazionale di Geofisica e Vulcanologia (INGV) with the geographical distribution of the peak ground acceleration, an instrumental local measure of earthquake ground motion intensity. This earthquake was followed by a long sequence of aftershocks, which is still ongoing, with events of magnitude as large as 5.3.

Using the ground motion information provided by INGV, the consortium ERN/RED applied the Italy module of its Pan-European probabilistic earthquake-loss estimation model in order to quantify the potential size of the losses produced by the main event and its largest aftershock. ERN/RED used its own exposure database, complemented with the Italian bureau of statistics ISTAT data. With high probability, the modeled direct losses range between 315 and 920 million euros, with an average of 620 million euros. The geographical distribution of the losses is qualitatively described in Figure 2.

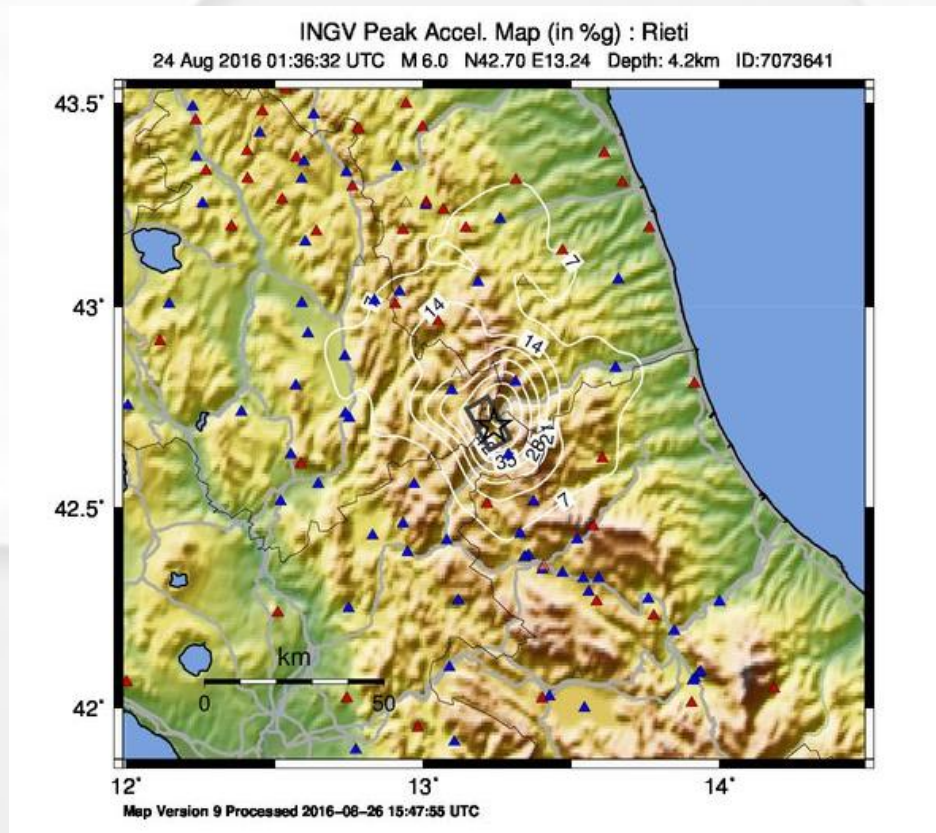


Figure 1. Amatrice Earthquake Shake Map, Italy, August 24, 2016
Source: INGV, <http://shakemap.rm.ingv.it/shake/7073641/pqa.html>

These estimates include direct losses in the residential, commercial, industrial, healthcare and education sectors. Therefore, costs of debris removal, emergency management, losses to contents and infrastructure, as well as losses due to business interruption are not included in our estimates.

The earthquake insurance penetration in Italy is negligible in the residential sector and higher for industrial and commercial sectors. However, the mountainous area most severely hit by the quake does not have a large stock of industrial and commercial assets. Therefore, the insured losses are expected to be lower than 50 million euros.

About ERN/RED

Consortium ERN/RED is formed by two companies dedicated to modelling catastrophic risk due to natural perils. ERN (Evaluación de Riesgos Naturales), a company based in Mexico City, has developed models for several perils and territories, mainly in Latin America; several of its models are used for regulatory purposes in various countries. RED (Risk Engineering + Design) is a company based in Pavia, Italy, with ample experience in catastrophic modelling. Together, both companies form the consortium ERN/RED, which has developed a Pan-European earthquake-loss estimation model that currently covers 44 countries of this continent. This consortium also acts as the Risk Management Specialist for CCRIF, the Caribbean Catastrophe Risk Insurance Facility.

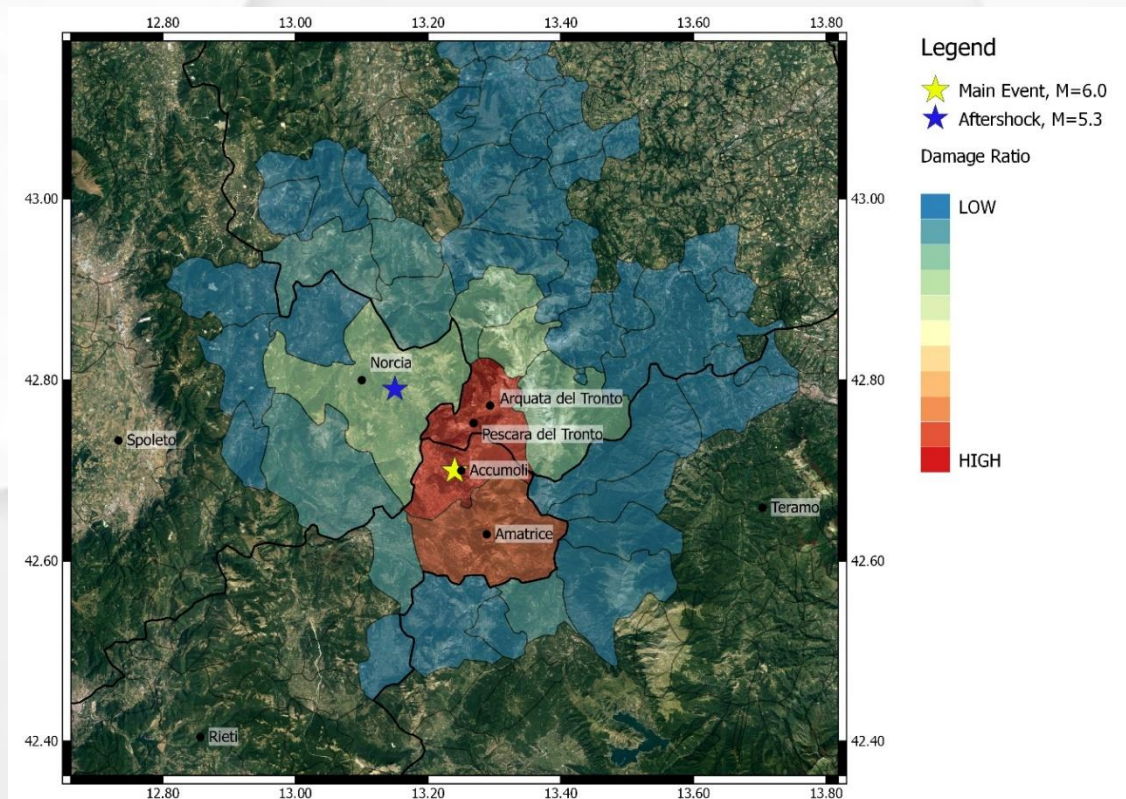


Figure 2. Distribution of losses for the Amatrice Earthquake, Italy, August 24, 2016

By: ERN/RED Consortium