Geophysical Research Abstracts,
Vol. 11, EGU2009-4060, 2009
EGU General Assembly 2009

Seismic risk and loss assessment for Bucharest, Romania

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The SELENA risk tool (http://www.norsar.no/pc-35-68-SELENA.aspx) has been extended into a real time damage assessment tool. It can now be integrated with real-time ShakeMaps using the QuakeML XML format. Few cities have yet developed a real time ShakeMap system based on observational data, but Bucharest, which suffered severe damages during the Vrancea 1976 earthquake is in the process of implementing a real-time ShakeMap system. While waiting for the real-time ShakeMap system to be implemented we have used the building and population information database established in 1999 to conduct a quasi real-time damage and loss scenario. Several damage scenarios were concluded, and among these we in particular modeled the 1977 M=7.4 earthquake since we for this earthquake have some empirical damage data. While a detailed comparison between a scenario and the 1977 earthquake is not possible due to changes in the buildings and population it still provides the best “benchmark”. Our findings indicate that an earthquake similar to the 1977 would cause economic losses in the range 6-12 billion Euros and claim up to 1000 casualties in Bucharest. All numbers are computed with confidence intervals.