



Urban Seismology in Bucharest, Romania

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Bucharest, the capital of Romania with about 2.5 million inhabitants, is frequently haunted by intense, damaging earthquakes (1940, 1977, 1986 & 1990). Within the framework of the Collaborative Research Centre (CRC 461) "Strong Earthquakes - a Challenge for Geosciences and Civil Engineering" seismic wavefields in Bucharest were recorded continuously with broadband instruments for 9 month. The Karlsruhe Broadband Array (KABBA) with its 32 mobile broadband stations was installed in the city centre and the periphery of Bucharest between end of October 2003 and beginning of August 2004. The aims of the project are on one hand the recording of local, regional and teleseismic earthquakes and on the other hand the continuous acquisition of urban seismic noise.

The analysis of the regional intermediate-depth Vrancea earthquakes should verify and extend the existing ShakeMap, which was developed within the CRC 461. A particular focus is the analysis of the interaction between soil and buildings at selected sites. Furthermore, we want to determine a model of the local shear-wave velocity, estimate the local seismic attenuation at different sites and carry out a monitoring of the seismic noise the city by e.g. calculating long-term spectrograms. At one site we placed two instruments in an 11-storied building (one in the basement and one in the uppermost floor) to record the coupled motion of the ground with the building structure.