Geophysical Research Abstracts,
Vol. 11, EGU2009-4900, 2009
EGU General Assembly 2009

Calibration of local magnitude in case of crustal earthquakes for Romania

C. Neagoe, F. Borleanu, M. Popa, C. Ionescu, and M. Radulian
NIEP, Bucuresti, Romania (cristian.neagoe@infp.ro)

Recently the number and distribution of the Romanian Seismic Network instruments has been improved significantly. Since at present the used magnitude law for Romania crustal events is that determined by Richter for California and leads to large variations among stations, our goal is to calibrate this relation for each station and seismogenic region on the Romanian territory.
The new magnitude calibration is based on maximum amplitude measured in displacement for the standard short-period Wood-Anderson seismometer.
We used data recorded by the Romania permanent broadband three-component seismic stations between January 2007 and December 2008. There were selected waveforms with sufficiently high signal to noise ratio. The analysis was carried out separately for each seismic zone.
Implementation of the new magnitude calibration in the Antelope system leads to a better constrained magnitude value per station and implicitly more reliable estimations for the event magnitude. The obtained magnitude was compared with the magnitude provided by HypoDD algorithm.
The new ML magnitude scale will be introduced in the routine earthquake processing contributing with better earthquake size determinations for the international bulletins. In the future we plan to extend the magnitude calibration for regional events as well.