



Seismicity location from analysis of a 2 years passive seismological experiment around Ulaanbaatar

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We analyse broadband seismological records from a 2 years temporary array deployed over a 400x600km² region in central Mongolia, including Ulaanbaatar region, by a Sino-Mongolian cooperation. The dataset is completed with all available regional data, mostly recorded by Mongolian National Seismic Network (MNSN) operated by Research Center for Astronomy and Geophysics (RCAG). The seismic activity of the covered area is not very high, except SW of Ulaanbaatar. To obtain as good as possible image of this seismicity, we have first to determine a regional velocity model. The development of mining activity in Mongolia, allows us to record a large set of quarry blasts. Due to the very continental position of Mongolia, micro-seismic noise level is low and the signal of these human made sources are very often recorded at distances as far as 200km. Travel time information of direct, reflected and refracted waves are used to produce crustal information (Moho depth and mean crustal P wave velocity, and velocity below the Moho, V_p/V_s ratio) over the area of observation. We show that the crust of the studied area is relatively homogeneous which allows us to improve this very simple model, searching the best crustal model with Velest software. The experiment was supported by Sino-Mongolian joint project titled "The Geophysical Investigation and Deep Structure Modeling for Seismic Hazard Assessment in the Far East", Project code: 2011DFB20120.