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Three-dimensional seismic velocity structure as determined by double-difference tomography in and around Emeelt fault

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We focus on the main active seismic zones in the area of Ulaanbaatar which can have the main impact on the seismic risk of the Capital of Mongolia. A seismic activity is taking place near and within Ulaanbaatar area since 2005. The seismicity observed by local permanent network has reveals the significant increase of seismic activity in the Ulaanbaatar area. Twice more earthquakes were recorded during the last 6 years than between 1970 and 2004 in the considering area. These swarms consist of more than 1600 events within magnitude range of 0.5 to 4.2. Most of these events are located close to the 2 major active structures that are NS-Emeelt and EW-Hustai striking faults. This paper discusses some results of the analysis of this high seismic activity recorded by permanent and dedicated mobile networks. For precise study of the seismic activity region, we had installed a number of temporary seismic stations since December of 2008. Double-difference tomography was used to estimate the three-dimensional velocity structures in and around the Emeelt area based on the travel time data collected during seismic observation.