

## Seismicity and waveform through the Philippine Sea Plate under the Metropolitan area observed by MeSO-net

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In central Japan, the Philippine Sea plate (PSP) subducts beneath the Tokyo Metropolitan area, the Kanto region, where it causes mega-thrust earthquakes, such as the 1703 Genroku earthquake (M8.0) and the 1923 Kanto earthquake (M7.9) which had 105,000 fatalities. A M7 or greater earthquake in this region at present has high potential to produce devastating loss of life and property with even greater global economic repercussions. The Central Disaster Management Council of Japan estimates the next great earthquake will cause 11,000 fatalities and 112 trillion yen (1 trillion US\$) economic loss. This great earthquake is evaluated to occur with a probability of 70 % in 30 years by the Earthquake Research Committee of Japan.

We had started the Special Project for Earthquake Disaster Mitigation in Tokyo Metropolitan area (2007-2011). Under this project, the construction of the Metropolitan Seismic Observation network (MeSO-net) that consists of about 400 observation sites was started [Kasahara et al., 2008; Nakagawa et al., 2008]. Now, we had 178 observation sites. The correlation of the wave is high because the observation point is deployed at about 2 km intervals, and the identification of the later phase is recognized easily though artificial noise is very large. We also discuss the relation between a deformation of PSP and intra-plate M7+ earthquakes: the PSP is subducting beneath the Honshu arc and also colliding with the Pacific plate. The subduction and collision both contribute active seismicity in the Kanto region. We are going to present a high resolution tomographic image to show low velocity zone which suggests a possible internal failure of the plate; a source region of the M7+ intra-plate earthquake. Our study will contribute a new assessment of the seismic hazard in the Tokyo Metropolitan area.