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Room:Convention Hall

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The Metropolitan Seismic Network for Detecting Mega-thrust and Intra-slab Earthquakes beneath the Tokyo Metropolitan Area

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We have started the special project for earthquake disaster mitigation in the Tokyo Metropolitan area (Fiscal 2007-2011) and have been constructing the MeSO-net (Metropolitan Seismic Observation network) as a part of the project. The MeSO-net consists of about 300 stations at the project termination. The project started in 2007 and so far 249 stations have been deployed at mainly elementary and junior high schools. To achieve stable seismic observation with reducing surface ground noise, sensors were installed in boreholes at depth of 20m. The sensors have a wide dynamic range (135dB) and a wide frequency band (DC to 80Hz). Data are digitized with 200Hz sampling and telemetered to the Earthquake Research Institute. The result shows that the MeSO-net can detect and locate most earthquakes with magnitudes (M) more than 3 in the metropolitan area. This is the last fiscal year of the project so that we will provide an accurate estimation of the plate boundaries of the Philippine Sea (PSP) and the Pacific plates beneath the metropolitan area, allowing us to possibly discuss clear understanding of the relation between the PSP deformation and $M7+$ intra-slab earthquake generation. Our project currently drives toward its ultimate goal to contribute directly to the next assessment of the seismic hazard in the Tokyo metropolitan area.

Keywords: Seismic instruments and networks, Subduction zones, Earthquake source observation, Tomography, Earthquake ground motion and engineering seismology