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MeSO-net for Detection of Mega-thrust and Intra-slab Earthquakes beneath Tokyo Metropolitan Area, JAPAN (3)

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To better assess the seismic hazards produced by a magnitude 7 or greater (M 7+) earthquake in the Tokyo metropolitan area, we have launched the Special Project for Earthquake Disaster Mitigation in Tokyo Metropolitan area (2007-2011). This requires establishing a highly dense seismic-array observation network in and around Tokyo to monitor ongoing micro-earthquakes with relatively high precision even if noise levels are generally high. We have started developing the Metropolitan Seismic Observation network (MeSO-net). Deployment of MeSO-net seismic stations is currently underway. The number of observatories at project termination will be 400 with a 2-5 km interval in space. In this paper, we summarize how we solved technically difficult and practical problems involved in MeSO-net construction. We start with a review of related work to better understand the technical difficulties involved in deploying stations in metropolitan areas such as Tokyo. Next, we explain our approach to verifying a meaningful design of an observatory and its deployment at local sites. We further describe our decision-making process in practice for implementing station deployment. We hope that establishing the MeSO-net will support a new assessment of the seismic hazards produced by M 7+ earthquakes in the Tokyo metropolitan area.

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