

## S-net Utilization for Real-Time Tsunami Inundation Forecast System

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NIED is constructing S-net (Seafloor Observation Network for Earthquakes and Tsunamis along the Japan Trench) that consists of about 150 ocean bottom observation stations and covers wide area of the offshore Kanto, Tohoku, and Hokkaido. S-net successfully observed the 2016 Fukushima-oki earthquake and tsunami propagation from the offshore toward the land. Such records are useful for obtaining additional lead time for earthquake and tsunami early warning. Recently NIED developed a new methodology of realtime tsunami inundation forecast system using S-net, which will provide flow depth in addition to the tsunami arrival time and heights. In the system, the Tsunami Scenario Bank (TSB) that contains offshore tsunami pre-calculated waveforms, coastal tsunami heights, flow depth maps, and others is constructed in advance along the Pacific coast of Chiba prefecture in the Kanto region. When a tsunami is generated with an earthquake, several appropriate tsunami scenarios that can explain offshore tsunami observations are quickly selected from the TSB. The tsunami inundations are estimated explicitly without any source information, which may contain large estimation error. The system is evaluated and improved through the demonstration experiments with local governments. The performance of the system is validated for the simulated data of the 1677 historical Boso earthquake as well as the observed data of the 2016 Fukushima-oki earthquake.

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