



S-net project: Construction of large-scale seismic and tsunami observation system on seafloor along the Japan Trench

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S-net (Seafloor Observation Network for Earthquakes and Tsunamis along the Japan Trench) project started in 2011, and construction of S-net has finished in 2017. The S-net is a large-scale seafloor network of cable-linked seismic and tsunami observatories around Japan Trench and Kuril Trench in Japan. It has 150 real-time monitoring observatories that cover the area about 1000km x 300 km from off-Hokkaido to off-Kanto. It is expected that early tsunami and earthquake warnings and earthquake researches will be enhanced. S-net consists of six segment networks of about 25 observatories and 800 km fiber optic cable (1,500 km fiber optic cable for the Japan Trench outer rise segment network). Ocean bottom fiber optic cables, about 5,500 km in total length, connect the stations to land. The observatories will be placed on the seafloor off Hokkaido, off Tohoku and off Kanto, in a spacing of about 30 km almost in the direction of East-West (perpendicular to the trench axis) and in a spacing of about 50 - 60 km almost in the direction of North-South (parallel to the trench axis).

Each observatory is equipped with seismometers of three types and two hydro-pressure gauges (tsunami meters) of the same type for redundancy. The digitized data will be transmitted to the data centers, JMA (Japan Meteorological Agency) for monitoring purpose, and so on, using IP network.

A part of S-net observatories started to operate in May 2016, and detected many earthquakes and also tsunamis like with the earthquake of the November 22, 2016 off Fukushima (M7.4). We will also report the obtained data and spectrum characters.

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