

## **Real Time Monitoring Data Application and Simulation Researches for Earthquake and Tsunami Disaster Mitigation**

Real time monitoring systems around seismogenic zone are very important for early detection of earthquake and Tsunamis. Furthermore, these system are also indispensable to understand crustal activities and phenomena as precursor. In Japan, Ocean floor network systems as DONET and S-NET already deployed for early warning and prediction researches. In DONET system, DONET1 and DONET2 are focusing on the Nankai Trough seismogenic zone southwestern Japan, S-NET is focusing on off east Japan based on lessons learned from 2011 East Japan earthquake. For disaster mitigation, not only real time data but also advanced simulation are indispensable. For example of simulation, we developed the recurrence simulation of mega thrust earthquakes, data assimilation and real time inundation simulation using real time data. Otherwise, real time monitoring system detect micro seismicity for the estimation of seismic stage such as inter seismic stage and pre seismic stage. Finally, we have to integrate advanced simulation and real time information for disaster mitigation.

In this presentation, we explain Japanese ocean floor networks and advanced simulation researches.

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