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Towards disaster mitigation on Earthquakes and Tsunamis using off shore real time monitoring data

Recently, many destructive earthquakes and tsunamis occurred in the world such as 2011 Tohoku earthquake in Japan, 2018 Palu earthquake/ tsunami at Sulawesi Island in Indonesia etc. Therefore, off shore real time monitoring systems around seismogenic zones are very important for early detection of earthquake and tsunamis. Furthermore, these system are also indispensable to understand crustal activities and phenomena as precursors. In Japan, Ocean floor network systems as DONET and S-NET already deployed for early warning and prediction researches. Recently, N-NET will be developed and deployed around western part of Nankai trough seismozenic zone in southwestern Japan. 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 Tohoku earthquake. The system of N-NET will be developed as the highbrid system of DONET and S-NET. For disaster mitigation, not only real time data but also advanced simulation are indispensable. We developed the recurrence simulation of mega thrust earthquakes, data assimilation and real time inundation simulation using real time data in Nankai trough seismozenic zone. In this presentation, we explain Japanese ocean floor networks and advanced simulation researches.

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