Multi-sensor monitoring network for earthquake precursor study near subduction zone at Boso, Japan

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New observations from ground and space have provided multiple evidences of pre-earthquake signals and the latest studies show their statistical significance, repeatability, and universality. In this project, to understand the preparation process of large earthquakes and slow-slip events in subduction zone, especially to clarify the nucleation stage of the earthquake cycle, we plan to establish a dense observation network in Boso, Japan, where large subduction earthquakes are expected soon. Since the subsurface fluid flow may play an important role in the preparation process of subduction activities, we intend to employ electromagnetic approaches including oceanic and continental MT survey to monitor the underground resistivity structure which is sensitive to the dynamics of fluid. Other geophysical monitoring such as ULF geomagnetic and geoelectrical observations, radon measurements, and inland GPS movements, TIR, and OLR will be incorporated to help to understand the preparation process and evaluate the applicability of various pre-earthquake signals towards short term earthquake forecasting. We call this idea “sensor WEB”. We will show the state of the art and some results in our presentation.
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