

## Discussion on ocean area observation to detect crustal activity under the seafloor: Present and future

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Recent progress of seafloor observations for earthquake and crustal deformation, such as deployment of submarine cable networks of S-net and DONET, and repeated observations of GNSS/A and acoustic extensometer (direct path acoustic ranging), enable us to evaluate on-going crustal activities in the megathrust regions along the Japan trench and the Nankai trough. We review the present status and the future plans of such seafloor observations, and discuss the future directions of seafloor observation networks, especially for real-time monitoring of crustal activities. Toward these directions, we also share the present status of novel approaches and systems such as optical fiber, laser ranging or seafloor SAR and real-time geodetic observations using mooring buoys or wave glider, and so on.

Keywords: Crustal activity under the seafloor, Ocean area observation, Future perspective