[EE] Evening Poster | S (Solid Earth Sciences) | S-IT Science of the Earth's Interior & Tectonophysics

[S-IT24]Probing the Earth's interior with geophysical observation on seafloor

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Most important sites for plate tectonics and mantle dynamics studies (e.g., subduction zones, spreading ridges, and hot spots) are located in oceanic regions. The coverage of seismic stations is concentrated in land areas, which cover only one-third of Earth's surface. Since 1990s, technology for seafloor geophysical instruments to explore deep earth structure have been advanced, such as broadband ocean bottom seismographs (BBOBSs), ocean bottom electro-magnetometers (OBEMs), and pressure gauge, because observation network in oceanic regions is essential for major breakthroughs in Earth sciences. Technical advance in the instruments including cabled realtime seafloor networks have made the seafloor observation more common and reliable, which promotes a number of seafloor observations, both temporary and permanent networks, in the last decade. We call for papers on recent scientific results from such observation projects, including those on crust and mantle structure beneath subduction zones, hot spots, Large Igneous Provinces, and spreading ridges. Technical advances for observation in oceanic regions, including seafloor instruments and drifting float, proposals and plans for innovative observations are also welcome.

[SIT24-P03]Shear wave splitting observed in the Ontong Java Plateau and adjacent regions

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We measured shear wave splitting of SKS, SKKS, and PKS phases observed at broadband seismic stations on the sea floor and islands in the Ontong Java Plateau (OJP) and adjacent regions. Due to high noise level, we could use only 3 deep earthquakes with magnitudes greater than 7 occurred in the south America. A bandpass filter with cut-off frequencies between 0.02 and 0.2 Hz was applied to the observed seismograms, of which frequency range is a bit lower than the usual for continental areas. By using the eigenvalue method (Silver and Chan, 1991; Helffrich et al., 2000), we tried to estimate the splitting directions and delay times. However, except for three stations, null or node with N-S and E-W directions were obtained or many cases. The directions of the nodes did not coincide with the absolute plate motion of the Pacific plate (WNN-ESE, Argus et al., 2011). The exceptions were observed at the stations located in the southeast margin of the OJP near Stewart Basin and Ellice Basin, which showed that the fast direction was NNW-SSE or N-S and the delay time was 1–2 s. These observations suggest that the directions of mantle flows below the OJP are different from those in the southeastern outside.