

Ambient noise tomography for northern Okinawa trough OBS array

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From September 2018 to June 2019, IES, TORI, and JAMSTEC deployed broadband OBSs in the north Okinawa trough and its neighboring sea (NOT). Data from OBS vertical component combined with that from F-net stations and five temporary stations are suitable to ambient noise study. We perform ambient noise tomography using these array data to map the upper crust to shallow mantle structures of this part of the Ryukyu subduction zone. Cross-correlation functions were calculated and phase velocities of 5-30 s were measured, followed by a one-step, wavelet-based multiscale inversion for 3-D models of both Vs and its azimuthal anisotropy. Preliminary results show correlation between the resolved azimuthal anisotropy and the measured shear-wave splitting from local slab events. We are especially interested in whether medium-sized melt mush zone in the crust can be identified beneath the OT as evidence for late stage of continental rifting and early stage of seafloor spreading.