

## Observation of turbulent mixing using a deep float with microstructure sensors

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Automated microstructure observation method using a deep float (DeepNINJA) with velocity shear probe and fast-response thermistor is being elaborated. From the field test observation in August 2016, availability of shear probe data was tested by comparing turbulent dissipation rates from thermistor. Shear probe data were found to be worse by vibration from motor operations at buoyancy adjustment and by noise at slow ascending speed of the float. Vertical profiles of turbulent energy dissipation rate could be obtained with the hybrid use of shear probe and thermistor data by correcting time-constant of the thermistor with reliable shear probe data and filling gaps of unavailable shear probe data. Data will be reported for the deep float which was deployed on December 12, 2018, in the western slope of Japan Trench off Aomori. The float is observing 0 - 4000 m turbulence profile every 10 days and will be recovered in April R/V Shinsei-maru cruise.

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