Development of methods and systems for vertical mixing and observations (OMIX-A01-1)

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In order to know the distribution of vertical mixing and generating mechanisms in the western North Pacific and to elucidate the influence on ocean circulations, this team developed/introduced/made practical following three observational systems that are capable to concurrently observe turbulence with vertical mm-scales and currents with 10m-scale which can be resolved by numerical models, and perform in-situ observations. 1) Developed turbulence estimate method with fast response thermistors attached to CTD platform, and obtained numerous microstructure data down to deep/intermediate depths or bottom by use of Japan Meteorological Agency, JAMSTEC and fisheries-related CTD observational array. 2) Developed autonomous observation system of underwater gliders with turbulence sensors and ADCP. 3) Developed long-term time series observation system with autonomous floats or moorings with turbulence sensors or current sensors. These new observing systems were or being tested in the real oceans. This team conducted cruises of R/V Hakuho-maru KH-16-3, KH-16-7, KH-17-5 and R/V Shinsei-maru KS-15-5, KS-16-10, KS-19-6, and microstructure and mooring observations in the Multanovskiiy 2018 cruise. This poster presentation reports this team activity and some results.

Keywords: Turbulence, Ocean Mixing, Observation system

