

Finestructures around the Kuroshio Current imaged by seismic reflection data

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Previous researches demonstrate that seismic reflections within seawater represent the finestructures characterized by distinct temperature/salinity distribution. Since the acoustic velocity and density are affected by temperature and salinity, sharp gradient of temperature and salinity can be imaged as reflections on the seismic profiles. These oceanic finestructures are important key to an understanding of large-scale thermohaline circulation as they influence earth's climate systems. Many seismic reflection surveys have been operated off southern coast of Kyushu where the Kuroshio Current, which is a warm current in the western Pacific Ocean, flows northeastward along the coast. These seismic reflection surveys originally were operated for the subsurface structures below seafloor in this area for the geological purposes. Here, based on our analysis of the seismic reflection data over the Kuroshio Current area, we represent 200 km-long seismic profiles along and perpendicular to the Kuroshio Current axis and discuss the characteristics of seismically-detected finestructures. In addition, velocity analysis is performed as a quantitative estimation of temperature/salinity variation in finestructures.