Characteristics of Vertically Propagating Near-inertial Internal Waves in the Japan Sea Excited in Northern Area

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Near-inertial internal waves (NIWs) have been considered to be an important agent for mixing. Near-inertial oscillations had been observed in the deep sea of the Japan Sea, and they are suggested to be the effect of NIWs induced by wind. However, the propagation processes of NIWs are unclear. In this study, velocities from current meters in the deep sea were calculated to estimate the generation regions of NIWs in the deep sea. The frequency of near-inertial oscillations observed in the current meters at Stn. PM5 (134º41' E, 37º42' N) from Oct 12, 2017 to Oct 14, 2018 had lower than the local inertial frequency at Stn. PM5. The current at the deeper depth was more blueshifted than shallower one. This result suggests that the NIWs observed in different depth in the same station were excited in different regions. The characteristics of NIWs based on the climatological density also suggested the NIWs reaching the deep sea are generally excited in the northern area in few degree lower latitude.

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