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OXYGEN MINIMUM IN THE JAPAN SEA

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The main goal of our work is to study structure of deep oxygen minimum layer in the Japan/East Sea. We use historical oceanographic data and data observed in frame of Joint International Project of the Japan/East Sea Study 1999- 2003. In the recent expeditions the dissolved oxygen samples were taken on the 12 or 24 levels in deep sea areas including one or two samples in the near-bottom boundary layer 3-9 m above the bottom in all casts. Shelf and deep areas of JES were completely covered by oceanographic and hydrochemical observations. New details of dissolved oxygen distribution and change in the Japan Sea are found. The substantial Oxygen Minimum Zone covers most of deep basin slopes. The minimal oxygen concentration in this zone is observed in the near-bottom boundary layer over the slope within the band of depth corresponding to the deep oxygen minimum layer. Oxygen concentration of about absolute minimal values (196.8 uM/kg) for the Japan Sea Proper Water is found in the nearŰbottom boundary layer over the north continental slope with depth of about 1000m in the area adjacent to the Tatarskii Strait. Similar oxygen concentration (197.8 uM/kg) were also found in the deep near-bottom layer of the southern Japan Sea area over the south-southwest Ulleung Basin deep slope. However, the depth of this oxygen minimum pattern is about 2000m. The oxygen minimum zone in the near-bottom layer over the deep slope resulted from circulation proc-esses and high negative oxygen flux due to organic matter decomposition over continental slope. Oxygen sink in deep oxygen minimum layer seems to be dominated in the oxygen minimum zone.