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EXPERIMENTAL STUDY OF CASCADING ON THE CONTINENTAL SLOPE IN PETER THE GREAT BAY

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The process of along the slope gravity current of high-density waters formed on the shelf in winter is known as a slope convection or cascading. In the Japan Sea a cascading is observed on the slope of Peter the Great Bay and is believed to be the main mechanism of deep and bottom water ventilation. The present work demonstrates the results of direct observations of cascading in the winter periods of 2010-2014, recorded with the help of bottom mooring stations (BMS) and ship CTD surveys. First time demonstrated a regularity, location, depth and interannual variability of cascading. The approach of cold shelf waters to the shelf edge observes every year, mainly in February-March, although some cases were recorded in April and even early May. Despite of this the only one cascading case was recorded by the BMS at the slope deeper than 1 km. At the same time, a significant number of intrusive layers observed by the CTD casts in the continental slope area indicates the penetration of cascading up to the foot of the continental slope (2800-3000 m).

Keywords: slope convection, cascading, Peter the Great Bay, continental slope, shelf, bottom mooring station.

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