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Laboratory study of edge internal waves over plane and inclined shelf bottom

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The experimental series has been performed in the thermally stratified tank of the Institute of Applied Physics RAS. The tank with its overall dimensions L*B*H = 18*4*2 m has the pycnocline-type stratification with the pycnocline formed at the depth of 1/3H with the temerature jump from 6C to 24C. A shelf model of height h = 1.2 m, width y = 0.65 m and length of l = 6.3 m was mounted along the side wall of the tank at its mid-length. The transition zone between the wall and the shelf (y = 0 ÷ 0.65 m) had the length of 3 m.
Periodic internal waves were produced by a wave-maker representing a submerged horizontal cylinder of the diameter of 0.3 m. The amplitude of induced internal waves was of about 0.1 m. The vertical and horizontal chains of thermoresistors were used for recording of temporal variations of the temperature field in the vicinity of the shelf edge. Both horizontal and inclined positions of the shelf bottom were used to study the mechanism of internal waves transformation in the shelf zone.
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