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Linear and non-linear mechanisms of formation of edge internal waves in the shelf zone

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The results of investigation of a mechanism of generation of edge internal waves in the shelf zone made basing on the known field measurements as well as on the laboratory experiments performed by the author are presented.
The conditions of formation of linear and non-linear edge waves from the viewpoint of internal hydrodynamic processes are analyzed.
The criterion of generation linear or non-linear internal edge waves is suggested. Particularly, it was revealed that the main reason of transformation of edge internal waves under the seasonal hydrological conditions in the shelf zone is their non-linear nature. This hypothesis is proved on the basis of the Korteweg – de Vries equation.
The study of the mode structure of linear internal waves under plane and inclined shelf bottom was performed to explain their modulation and spectral characteristics.

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