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The processes of internal wave generation in non-tidal sea

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Internal waves in non-tidal sea are essentially less intensive, than their analogues in the ocean or in the seas with strong tide, however are more various from the point of view of mechanisms of the origin. Generalization of modern knowledge about internal waves in non-tidal sea on the basis of long-term experience of the investigations spent in the Black and Caspian seas is given. The basic processes conducting to generation of intense internal waves are considered. As the most considerable sources of internal wave generation for lack of tide, the long internal waves which period is close to inertial, and also propagating on a shelf internal seiches serve. Both those, and others arise after strong wind action on the sea (passage of cyclones, etc.). Besides, rather often intense internal waves are generated by moving over shelf local hydrological fronts. Among the processes of this type revealed in supervision – generation of internal waves by fronts of up- and down welling origins as well as moving surface intrusions of freshened coastal waters. The set of frequency spectra of internal waves for non-tidal sea, generated by various sources is presented, their strong variability and difference from the Garrett-Munk spectrum is shown. The wide spreading of effects of nonlinearity in internal waves of non-tidal sea is shown. Possibilities of internal wave studies using Acoustic Doppler Current Profiler (ADCP) are demonstrated on the basis of recent observations. Work sponsored by Russian Foundation for Basic Research (the project № 08-02-00952 and №08-05-00831).