



Physical modeling of interaction of extreme waves with wave-protected structures

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The results of experimental research of combined (with impermeable and partly permeable members) structure and its variants subjected to extreme sea waves are presented. The models tests were carried out in the wave flume. The scale of modeling was accepted as 1:40. The reliability assessment of the construction was realized on 3 parameters: wave-protective properties, shock action on the plate of structure, and overflow through the upper part of the structure. There was determined the transmission coefficient was from 0.10 to 0.15. Having such a structure the transmitted wave height will not exceed 1.0 m. The tests of combined structure showed the wave-structure interaction includes the shock of wave on the bottom of a structure and the overflow through the top of the structure. The shock was eliminated by raising of the upper part of the structure or by wave-protective barrier. The overflow was stopped by making of the crown wall. There were 8 variants of main structure investigated. The results of physical modeling are used by designing of wave-protective structures in harbors.