



## **Extreme Waves Interaction with Lattice Structures**

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The interaction of the periodic extremely high-amplitude surface waves with the lattice structure were experimentally studied. The experiments were fulfilled at the hydro flume having 45 m length, 1.5 m width, and 1.2 m height. The structure has several parallel series of the piles. The distance between the series is small in comparison with the wave length. The different sizes of the piles were considered.

A large scale of the periods and heights of the waves were investigated. We obtained the data concerning the hydrodynamic pressure distribution and the velocity of the fluid as well as the forces acting on the construction from the fluid. The loadings on the pile of every series were measured. The lattice resistance coefficients were derived.

The results of this research were used by the design of the protective structure in the Black Sea.