



3D laboratory experiments on a system of low-crested breakwaters under oblique wave attack

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Low-crested breakwaters are being increasingly used for shore protection. Hydrodynamics around coastal structures are complicated and have not been fully understood. A series of large scale (1:40) 3D laboratory experiments were carried out in the Laboratory of Harbour Works, National Technical University of Athens to investigate the wave disturbance around a system of two non-parallel to the shoreline breakwaters. The structures were of the type of low-crested, permeable and attacked by obliquely incident waves. Three different water depths were tested in the basin with a range of various different spectra. The transmission and reflection coefficients were measured in the middle of each breakwater. For this purpose, 1 gauge and 4 gauges (in line) were placed on the landward and seaward side of each breakwater respectively. The effect of diffraction is incorporate at the measured wave heights. The measured coefficients are being compared to their corresponding estimated using existing empirical formulas. Most of those formulas neglect wave obliquity.