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Experimental drop test investigation into wetdeck slamming loads on a generic catamaran hullform

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abstract

A series of drop-test experiments was performed to investigate the hydrodynamic loads experienced by a generic wave-piercer catamaran hullform during water impacts. The experiments, which focus on the characterisation of the unsteady slam loads on an arched wetdeck, were conducted using a Servo-hy-draulic Slam Testing System (SSTS) that allows the model to enter the water at a range of constant speeds up to 10 m/s. The systematic and random uncertainties associated with the drop test results are quan-tified in detail. The relationships between water-entry velocity and both slam force and pressure dis-tributions are presented and discussed with a strong relationship between the slam force peak magni-tudes and impact velocity being observed. In addition the three dimensionality of the water flow in these slam impact events is characterised.