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Mechanical behavior of composite structures subjected to constant slamming impact velocity: an experimental and numerical investigation

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Highlights

- Experimental study and the help of numerical methods the structural behavior and the effect of the flexibility of composite panels on hydrodynamic loads and the dynamic deformation response.
- A high velocity shock machine was used to perform a constant velocity during water entry on composite panels.
- The numerical model was implemented using Coupled Eulerian–Lagrangian (CEL) approach for modeling of a three dimensional slamming impact.
- The numerical results give a good correlation with the executed experimental results in both hydrodynamic force and deformation response.
- Results of this study can be assisting vessel designers to understand the influence of the elastic structural behavior on hydrodynamic loads.

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