

## D. Varas Doval

Experimental and numerical analysis of the behaviour of integral fuel tanks submitted to high velocity impact

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High speed impacts on fluid-filled tanks are considered as one of the most important threats in aircraft vulnerability, since the fuel tanks represent the largest exposed area of all the vulnerable components. The behaviour of fluid-filled aluminium tanks subjected to high-velocity impact has been studied on the Thesis. An experimental and numerical methodology has been employed to analyze the influence of two different factors on the tank structural behaviour: impact velocity and volume fraction. The analysis of the results has allowed a better understanding of the Hydrodynamic Ram phenomenon, which could contribute to attenuate it on future fuel tanks designs.

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