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Lagrangian Particle Hydrodynamics for Fluid Structure Collision Analysis in Advanced Aerostructures JAVID BAYANDOR, The Sir Lawrence Wackett Aerospace Centre, Royal Melbourne Institute of Technology — One of the key aerostructure certification criteria pertaining to the design phase, particularly in advanced structural concepts, addresses fluid-structure crash scenarios such as aircraft ditching on the water surface and bird-strike. Destructive trials on full-scale aerospace prototypes to evaluate damage sustained during fluid-structure collisions are extremely costly. Therefore, efforts have been made to numerically model such events with sufficient accuracy to significantly reduce the minimum number of tests required for design approval procedures. This presentation identifies the simulation strategies adopted using the Lagrangian particle hydrodynamics methodology in pursuit of such an investigation.

Javid Bayandor
The Sir Lawrence Wackett Aerospace Centre,
Royal Melbourne Institute of Technology

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