

VALIDATION OF FR COUPLED FLUID-STRUCTURE NUMERICAL SIMULATION AGAINST EXPERIMENTS IN THE GE LARGE BLAST SIMULATOR LBS 501

Roland Puech¹, Pascale Thépault¹, Patrick Delcor¹, Jean-Louis Domingues-Vinhas¹, – Udo Schwarz²

1 – Commissariat à l’Energie Atomique at aux Energies Alternatives – Centre de Gramat

2 - German Armed Forces Technical Center WTD 52, Oberjettenberg

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As part of a FR/GE Technical Arrangement called “Blast simulation”, this paper presents a numerical study, which aims at the validation of coupled Computational Fluid Dynamics/Computational Structural Dynamics (CFD/CSD) methods for the simulation of structures under blast loading. A reinforced concrete mock-up was designed for this study and exposed to blast waves of different strengths in the Large Blast Simulator LBS 501. The paper provides an overview about the numerical methods and presents a detailed evaluation and comparison between simulation and test data. An inhouse code provides coupling between codes Ouranos (CFD) and Abaqus (CSD).