BLAST WAVE PROPAGATION IN A GENERIC FACILITY

A. Amini[1], F. Togashi[2], J. D. Baum[2], O. Soto[2] & R. Lohner[3]

[1]*Defense Threat Reduction Agency, Fort Belvoir, VA 22060, USA*
[2]*Science Application International Corporation,*
1710 SAIC Dr., MS 2-6-9, McLean, VA 22102, USA
[3]*George Mason University, Dept. of Computational and Data Science, College of Science,*
MS 6A2, Fairfax, VA 22030, USA

The Defense Threat Reduction Agency (DTRA) has initiated a program to study blast damage and fragment dispersion phenomena associated with transient and quasi-static loadings created by internal detonations. The generic test facility constructed includes several rooms such as a main detonation room, and three to six bays. The program encompassed both experiments and numerical simulations that investigated the response of interior walls made of various materials to blast loading. This paper will describes the numerical methodology, the application of the coupled CFD and CSD methodology to a study of CMU walls response to a blast in the detonation (main) room, and prediction comparisons to experimental data.

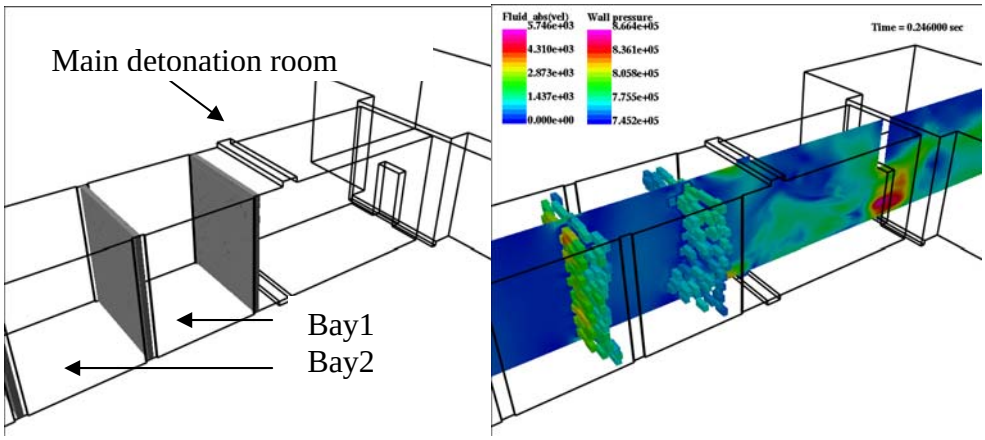

Fig.1 Configuration of the test facility and computed results (Fluid velocity and Structure pressure plot)