**USM3D Simulations for Third Sonic Boom Workshop**

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**ABSTRACT**

**INVITED PAPER TO SONIC BOOM SPECIAL SESSION**

**The NASA USM3D flow solver was used to compute test cases for the Third AIAA Sonic Boom Prediction Workshop (SBPW3). The test cases include an axisymmetric equivalent area body, a nearfield biconvex shock-plume interaction wind tunnel model, and the C608 Low Boom Flight Demonstrator. Numerical simulations were conducted on the mixed element grids and the tetrahedral grids provided by the workshop committee, as well as a family of grids generated by an in-house approach for sonic boom analyses known as BoomGrid. The nearfield pressure signatures were extracted, propagated to the ground and the perceived loudness levels on the ground was computed. The USM3D nearfield pressure signatures, corresponding ground signatures, and loudness levels on the ground are compared with mean values from other workshop participants.**

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