Abstract Submitted
for the SHOCK15 Meeting of
The American Physical Society

Ignition and Growth Reactive Flow Modeling of Shock Initiation of PBX 9502 at -55°C and -196°C[1] STEVEN CHIDESTER, CRAIG TARVER, Lawrence Livermore National Laboratory — Recently Gustavsen et al.[1] and Hollowell et al.[2] published two stage gas gun embedded particle velocity gauge experiments on PBX 9502 (95%TATB, 5% Kel-F800) cooled to -55°C and -196°C, respectively. At -196°C, PBX 9502 was shown to be much less shock sensitive than at -55°C, but it did transition to detonation. Previous Ignition and Growth model parameters for shock initiation of PBX 9502 at -55°C are modified based on the new data, and new parameters for -196°C PBX 9502 are created to accurately simulate the measured particle velocity histories and run distances to detonation versus shock pressures.

[1] R. Gustavsen, et al., J. Appl. Phys. **112**, 074909 (2012).
[2] B. Hollowell, et al., Journal of Physics: Conference Series **500** (2014)182014.

[1]This work was performed under the auspices of the U. S. Department of Energy by the Lawrence Livermore National Laboratory under Contract No. DE-AC52-07NA27344.

Craig Tarver
Lawrence Livermore National Laboratory

Date submitted: 29 Jan 2015 Electronic form version 1.4