

Abstract Submitted  
for the SHOCK17 Meeting of  
The American Physical Society

**A multiphase iron equation of state** TRAVIS SJOSTROM, SCOTT CROCKETT, Los Alamos National Lab — We detail a new extended range multiphase equation of state for iron. Particular attention is paid to the warm dense liquid regime where we have performed density functional theory (DFT) based quantum molecular dynamics for densities up to  $30 \text{ g/cm}^3$  and temperatures from 1 to 100 eV. Additionally we make use of DFT results to constrain the EOS for thermally excited solids phases and the melt curve. Significant comparisons are made with experimental data and distinction is made between the accuracies of the simulation and experimental data.

Travis Sjostrom  
Los Alamos National Lab

Date submitted: 22 Feb 2017

Electronic form version 1.4