

Abstract Submitted  
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**Shock Processes in Water: multi-scale comparison and experimental results** LONGHAO HUANG, JOHN BORG, Marquette University — The motivation for this research is developing a better understanding of shock processes in water. This work seeks a better understanding of how simulations at various scales (continuum and molecular dynamic) result in differing estimates of the shock thickness in water. This is accomplished utilizing and comparing Direct Numerical Simulation (DNS) to Molecular Dynamic (MD) simulations. Shock experiments were performed in order to better understand the simulated results. The DNS simulations utilize pressure dependent viscosity models in order to match experimental results. The Large-Scale Atomic/Molecular Massively Parallel Simulator (LAMMPS) underpredicts the experimentally determined shock thickness.

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