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**Stress and Temperature Distributions of Individual Particles in a Shock Wave Propagating through Dry and Wet Sand Mixtures** MERIT SCHUMAKER, Marquette University, SARAH T. STEWART, U. California, Davis, JOHN P. BORG, Marquette University — Determining stress and temperature distributions of dynamically compacted particles is of interest to the geophysical and astrological research communities. However, these particle interactions during a shock event are not easily observed in planar shock experiments; it is with the utilization of mesoscale simulations that these granular particle interactions can be unraveled. Unlike homogenous materials, the overall averaged hugoniot state for heterogeneous granular materials differs from the individual stress and temperature states of particles during a shock event. From planar shock experiments on dry and wet sand mixtures, simulations were constructed using CTH. A baseline dry sand simulation was also setup to be compared to sand grains that possessed water particles between grains. It is from these simulations that the distributions of stress and temperatures for individual sand and water particles are presented and compared in this document.

Merit Schumaker  
Marquette Univ

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