Simulating ejecta production

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ABSTRACT

The interaction of strong shocks with material surfaces is known to generate significant amounts of particulate ejecta, generated by defects on the surfaces. We are developing a capability for simulating ejecta based on standard material models. This talk will discuss aspects of the development of this model, specifically the determination of the sizes of particles produced. This requires a model for the surface tension of fluid droplets which is capable of capturing the particle development without introducing numerical biases, and the ability to accurately track the motion of the material surface within an otherwise Eulerian code to minimize the effects of finite mesh resolution.