Abstract Submitted
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**Shock focusing using multiple micro-blast waves** SHI QIU, ZIJIE ZHANG, VERONICA ELIASSON, University of Southern California AME department — Numerical simulations have been used to study shock focusing effects from multiple micro-blast waves and to determine shock front amplification mechanisms as the wave converges. Overture, a partial differential equation solver, was used to solve the Euler equations with a second-order accurate Godunov algorithm. Adaptive mesh refinement was used to improve the accuracy and reduce the computational time. The early stage of each micro-blast wave was initialized using Taylor's similarity laws. The total energy of the blast waves was kept constant, but the number of blast waves and their respective size were varied from case to case. Results show that through careful geometrical arrangement and timing of the initialization of the charge, multiple micro-blast waves can be combined to yield more extreme thermodynamic conditions at the focal area than compared to a large blast wave with the same total initial energy.

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