Abstract Submitted
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**Delta-Measure Perturbations of a Contact Discontinuity** ROY BATY, Los Alamos National Laboratory — In this presentation, nonstandard analysis is applied to study generalized function perturbations of contact discontinuities in compressible, inviscid fluids. Nonstandard analysis is an area of modern mathematics that studies extensions of the real number system to nonstandard number systems that contain infinitely large and infinitely small numbers. Perturbations of a contact discontinuity are considered that represent one-dimensional analogs of the two-dimensional perturbations observed in the initial evolution of a Richtmyer-Meshkov instability on a density interface. Nonstandard predistributions of the Dirac delta measure and its derivatives are applied as the perturbations of a contact discontinuity. The one-dimensional Euler equations are used to model the flow field of a fluid containing a perturbed density interface and generalized solutions are constructed for the perturbed flow field.

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