Abstract Submitted
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Jump Conditions for Nonsteady Waves[1] WILLIAM ANDERSON, Los Alamos National Laboratory — The common forms of the Rankine-Hugoniot jump conditions apply only to steady waves, *i.e.*, those that equate mass flux into and out of the wave. However, many waves encountered in practice violate this condition, in that different characteristics of a wave may have different slopes. Consideration of the fundamental requirements of conservation of mass, momentum and energy in the absence of mass flux conservation allows derivation of expressions equivalent to the Rankine-Hugoniot relations, but without the requirement for conservation of mass flux. The primary difference is that knowledge of the wave profile at two different points is required, so that the characteristic slopes can be determined. In the case of a steady wave, the derived expressions reduce to the usual forms for the jump conditions.

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