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**Tensile shock waves in rubber** KRISHNASWAMY RAVI-CHANDAR,  
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We examine the propagation of waves of finite deformation in rubbers through experiments and analysis; in particular attention is focused on the propagation of one-dimensional tensile shock waves in strips of latex and nitrile rubber. Tensile wave propagation experiments were conducted at high strain-rates by holding one end fixed and displacing the other end at a constant velocity. A high-speed video camera was used to monitor the motion and to determine the evolution of strain and particle velocity in rubber strips. Shock waves have been generated under tensile impact in pre-stretched rubber strips; analysis of the response yields the tensile shock adiabat for rubbers. The propagation of shocks is analyzed by developing an analogy with the theory of detonation; it is shown that the condition for shock propagation can be determined using the Chapman-Jouguet shock condition.

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