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**Viscous Shear Layers Formed by Non-Bifurcating Shock Waves in Shock-Tubes** KEVIN GROGAN, MATTHIAS IHME, Stanford Univ — Shock-tubes are test apparatuses that are used extensively for chemical kinetic measurements. Under ideal conditions, shock-tubes provide a quiescent region behind a reflected shock wave where combustion may take place without complications arising from gas-dynamic effects. However, due to the reflected shock wave encountering a boundary layer, significant inhomogeneity may be introduced into the test region. The bifurcation of the reflected shock-wave is well-known to occur under certain conditions; however, a viscous shear layer may form behind a non-bifurcating reflected shock wave as well and may affect chemical kinetics and ignition of certain fuels. The focus of this talk is on the development of the viscous shear layer and the coupling to the ignition in the regime corresponding to the negative temperature conditions.

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