

2C13: SHOCK WAVE AND DETONATION PROPAGATION THROUGH U-BEND TUBES
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The objective of the research outlined in this paper is to provide experimental and computational data on initiation, propagation, and stability of gaseous fuel—air detonations in tubes with U-bends implying their use for design optimization of pulse detonation engines (PDEs). The experimental results with the U-bends of two curvatures indicate that, on the one hand, the U-bend of the tube promotes the shock-induced detonation initiation. On the other hand, the detonation wave propagating through the U-bend is subjected to complete decay or temporary attenuation followed by the complete recovery in the straight tube section downstream from the U-bend. Numerical simulation of the process reveals some salient features of transient phenomena in U-tubes.