

Abstract Submitted
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Accurate measurement of shock front sharp in two-stage light-gas gun. XIANG WANG, CHENGDAI DAI, HUA TAN, QINGSONG WANG, JINGUI WANG, LABORATORY FOR SHOCK WAVE AND DETONATION PHYSICS RESEARCH TEAM¹ — A two-stage light-gas gun is widely used for a variety of dynamic physics-property measurements up to 500 GPa or higher. The tilt and distortion of the impactor and of the resulting shock front have been precisely measured with sub-nanosecond resolution at the projectile velocities range from 2 to 7 km/s with Cu, Ta and Pt impactors. We describe our methods for data-analysis that permit us to measure the order of micron distortion of the impactor in free flying. The results of planar target experiments indicate that the distortion of shock front is non-axially symmetrical at most time and significantly different from previously reported results at LLNL.

¹LSD, Institute of Fluid Physics, CAEP, Mianyang 621900, Sichuan China

Xiang Wang

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