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**Velocity Correction for [100] LiF Optical Windows under Shock Compression, Recompression, and Unloading** B. LALONE, O. FATAYNOV, J. ASAY, Y. GUPTA, Washington State University — LiF is a standard optical window for interferometric measurements in shock wave experiments. It is generally assumed that the velocity correction, derived from single shock measurements, is applicable for arbitrary profiles. To determine the validity of this assumption, two types of experiments were carried out to determine velocity correction in compression, unloading, and recompression experiments. In the first, [100] LiF crystals were subjected to initial shock stresses ranging from 4 – 17 GPa, and unloaded completely. In the second set of experiments, [100] LiF crystals were subjected to initial shock stresses ranging from 5 – 11 GPa, and recompressed to 8 – 17 GPa. Velocity corrections were measured using experimental configurations in which the velocity of the reflecting surface is independently known. The present results show that, within experimental error, the velocity correction for LiF windows depends only on the particle velocity and is independent of the loading history. Work supported by DOE.

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