

Abstract Submitted
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Hugoniot-measurements of room- and high-temperature metals for study of EOS and strength TSUTOMU MASHIMO, YUYA GOMOTO, HIDEYUKI TAKASHIMA, MITSURU MURAI, AKIRA YOSHIASA, Kumamoto University — Pressure calibration in static high-pressure experiments has been undertaken on the basis of the EOS derived from the Hugoniot compression curves of metals (Au, Pt, Cu, W, etc.), MgO, etc. To obtain the strict EOS at room- and high-temperatures, we need to precisely measure the Hugoniot data, and access the strength and Grüneisen parameter under shock compression. If the Hugoniot data of elevated temperature samples are measured, the high-temperature EOS can be accurately derived, and the Grüneisen parameter can be directly discussed. The strength might decrease at high temperature. The Hugoniot-measurement experiments have been performed on single crystal Au, oxygen-free Cu, forged Ta and W by a streak photographic system equipped with a powder gun and two-stage light gas gun in the pressure range up to >200 GPa. In addition, the Hugoniot-measurement experiment of the elevated temperature samples was started using high-frequency heating on W, Au, etc. Some of the results will be presented, and the EOS and strength are discussed.

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