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Hugoniot-measurement experiment of high-temperature sample on W and Au for discussion of Grüneisen parameter TSUTOMU MASHIMO, KEIICHI OKA, HIDEAKI TAKASHIMA, YUYA GOMOTO, AKIRA YOSHIASA, Kumamoto University — Pressure calibration in static compression research has been undertaken on the basis of the equation of state (EOS) derived from the Hugoniot-compression curve of pressure scale materials such as Au and Pt. However, room-temperature isothermal compression curve and high-temperature compression curves have been derived by using the assumed Grüneisen parameter, which cause lager errors in the EOS analysis. If the Hugoniot data of high-temperature sample are measured, the Grüneisen parameter can be directly discussed, and the high temperature EOS can be accurately obtained. We have measured the Hugoniot data of room-temperature sample on Cu, W, etc. by using the high-time resolution streak camera system equipped with a powder gun and two-stage light gas gun. In this study, the Hugoniot-measurement technique of high-temperature sample using a high frequency heating apparatus was established equipped with a powder gun. The mirror-finished sample and driver plate were set on ceramic mount, and were surrounded by a high frequency heating coil. We succeeded in measurement of the Hugoniot data of high-temperature sample at 800° on W, Au, etc. The detailed results and discussion of Grüneisen parameter will be presented at the conference.

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