

Abstract Submitted  
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**Temperature measurements and hydrogen transformation under dynamic compression up to 150 GPa<sup>1</sup>** NIKOLAEV DMITRY, TERNOVOI VLADIMIR, PYALLING ALEXEI, KVITOV SERGEY, FORTOV VLADIMIR — Lithium fluoride single crystal window was used for registration of optical light emission during quasi-isentropic compression of hydrogen to the pressures 100-150 GPa. Initially gaseous hydrogen samples at 78 K temperature and different pressures in the range 4-30 MPa were investigated. Recorded brightness temperature profiles at near infrared wavelengths were analyzed to evaluate optical and transport properties of the investigated hydrogen sample and window. Different models of hydrogen EOS were used for one-dimensional hydrodynamic simulation of compression process and estimation of hydrogen temperature within compressed layer. The obtained data demonstrate abrupt change of final temperatures after heating higher than 3500K.

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