Abstract Submitted
for the SHOCK17 Meeting of
The American Physical Society

Preheating device for Isentropic Compression Experiments on GEPI PIERRE-YVES CHANAL, CEA, DAM, GRAMAT, F-46500 Gramat, France, GAETAN DAULHAC, ITHPP, Drele, 46500 Thgra, THIERRY D'ALMEIDA, CEA, DAM, GRAMAT, F-46500 Gramat, France, CAMILLE CHAUVIN, CEA, DAM, CEG, F-46500 Gramat, France — GEPI is a 3 MA, 500 ns, high-pulsed power driver operated by the CEA and primarily used for launching ramp compression waves in planar loads with stress levels up to 100 GPa. In order to enhance the ability to explore metallic phase diagrams over a wide range of thermodynamic paths, we have recently developed a device capable of pre-heating samples up to 1200 K. This device is based on inductive heating under primary vacuum and ensures a temperature uniformity of 10K across the sample. The main features of this heating device are presented, along with the various technical solutions which significantly simplified its insertion in a robust and reliable experimental configuration. Several experiments, carried out to date on various materials including iron and copper ramp-compressed starting from different initial temperatures, are presented as illustration.

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Date submitted: 27 Feb 2017 Electronic form version 1.4