Abstract Submitted
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The laser-driven isentropic compression and numerical studies of the iron alpha-epsilon transition in the context of planetology[1] NOUROU AMADOU, ERIK BRAMBRINK, TOMMASO VINCI, ALESSANDRA BENUZZI-MOUNAIX, MICHEL KOENIG, LULI, ecole polytechnique, France, THIBAUT DE RÉSSEGUIER, Institut P. CNRS. ENSMA. Université de Poitiers, Poitier, France, STÉPHANE MAZEVET, CEA DAM. Bruyères le Châtel. LUTH. Observatoire de Paris, Meudon, France, FRANÇOIS GUYOT, GUILLAUME MORARD, Université Paris Diderot. IMPMC. IPGP. CNRS. Université Pierre et Marie-Curie, Paris, France, KOHEI MYANISHI, NORIMASA OZAKI, Graduate school of engineering, Osaka University, Japan — The iron alpha-epsilon transition is one of the most studied phase transition. However, in the case of isentropic compression, the influences of this transition on the high-pressure states of iron are still unknown. We will present some experimental results and their numerical simulations. During this experiment performed on the Janus laser facility (LNLL), different pressure ramp shapes were used to study the dynamic of the alpha-epsilon transition and its influences on the final thermodynamic state. These results are important for the reproducing of Earth and Super-earth core conditions (2-15 Mbar, 5000-15000 K) on laboratory where the isentropic compression is the only promise experimental scheme.

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