Abstract Submitted
for the DPP07 Meeting of
The American Physical Society

Sorting Category: 4.11.0 (E)

Please ensure your abstract body does not exceed the red box.

Ion beam driven warm dense matter experiments[1] F. M. BIENIOSEK, P.A. NI, M. LEITNER, P.K. ROY, R. MORE, LBNL, J.J. BARNARD, M. KIREEFF COVO, A.W. MOLVIK, LLNL, H. YONEDA, U. of Electrocommunications, Tokyo, Japan, GSI COLLABORATION — We report plans and experimental results in ion beam-driven warm dense matter (WDM) experiments. Initial experiments at LBNL are at 0.3-1 MeV K+ beam (below the Bragg peak), increasing toward the Bragg peak in future versions of the accelerator. The WDM conditions are envisioned to be achieved by combined longitudinal and transverse neutralized drift compression to provide a hot spot on the target with a beam spot size of about 1 mm, and pulse length about 1-2 ns. The range of the beams in solid matter targets is about 1 micron, which can be lengthened by using porous targets at reduced density. Initial experiments include an experiment to study transient darkening at LBNL; and a porous target experiment at GSI heated by intense heavy-ion beams from the SIS 18 storage ring. Further experiments will explore target temperature and other properties such as electrical conductivity to investigate phase transitions and the critical point.

[1]* This work performed under U.S DOE contracts W-7405-Eng-48 and DE-AC02-05CH11231.

F. M. Bieniosek
fmbieniosek@lbl.gov
LBNL

- [ ] Prefer Oral Session
- [x] Prefer Poster Session

Special instructions: Please place with poster by P. Ni, et al., DIAGNOSTICS FOR HEAVY ION BEAM DRIVEN WARM DENSE MATTER EXPERIMENTS

Date submitted: 12 Jul 2007

Electronic form version 1.4