

Abstract Submitted  
for the DPP12 Meeting of  
The American Physical Society

**Early Commissioning Results of the NDCX-II Accelerator Facility**<sup>1</sup> STEVE LIDIA, DIEGO ARBELAEZ, WAYNE GREENWAY, JIN-YOUNG JUNG, JOE KWAN, PRABIR ROY, PETER SEIDL, JEFFREY TAKAKUWA, WILLIAM WALDRON, E.O. Lawrence Berkeley National Laboratory, ALEX FRIEDMAN, DAVID GROTE, WILLIAM SHARP, Lawrence Livermore National Laboratory, ERIK GILSON, Princeton Plasma Physics Laboratory, PAVEL NI, E.O. Lawrence Berkeley National Laboratory — The Neutralized Drift Compression Experiment-II (NDCX-II) will generate ion beam pulses for studies of Warm Dense Matter science and heavy-ion-driven Inertial Fusion Energy. The machine accelerates 20-50 nC of Li<sup>+</sup> to 1.2-3 MeV energy, starting from a 10.9-cm alumino-silicate ion source. At the end of the accelerator the ions are focused to a sub-mm spot size onto a thin foil (planar) target. The pulse duration is compressed from ~500 ns at the source to sub-ns at the target following beam transport in a neutralizing plasma. We report on the results of early commissioning studies that characterize beam quality and beam transport, acceleration waveform shaping and beam current evolution. We present measurements of time-resolved beam phase space density and variation in transverse beam centroid position. We present simulation results to benchmark against the experimental measurements, and to predict performance in subsequent sections of the accelerator.

<sup>1</sup>This work was supported by the Director, Office of Science, Office of Fusion Energy Sciences, of the U.S. Department of Energy under Contract No. DE-AC02-05CH11231.

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Date submitted: 11 Jul 2012

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