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Progress in Measuring Electron Cloud Effects in HIF Accelerators¹ A.W. MOLVIK, R.H. COHEN, A. FRIEDMAN, M. KIREEFF COVO, S.M. LUND, LLNL & HIF-VNL, F.M. BIENIOSEK, E.P. LEE, L. PROST, P.A. SEIDL, J-L. VAY, LBNL & HIF-VNL, M.A. FURMAN, LBNL Accelerators for heavy-ion inertial fusion energy (HIF) have an economic incentive to fit beam tubes tightly to beams, putting them at risk from electron clouds produced by secondary electrons, and ionization of gas from walls (a problem in accelerators for high-energy physics). We are using two complementary approaches with the High-Current Experiment (HCX): (1) Measure the electron emission and gas desorption coefficients from 1 MeV K^+ ions incident on a target, at angles near grazing incidence, to understand the processes and develop mitigation techniques. (2) Characterize electron production, accumulation, and the effects on ion beams in quadrupole magnets where we are commissioning a variety of charged particle diagnostics to measure net charge, gas density, and secondary electron production. These data will be compared with predictions of theory and simulations.

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- Prefer Oral Session
 Prefer Poster Session

Arthur Molvik
molvik1@llnl.gov
LLNL and HIF-VNL

Special instructions: Place next to papers by R. Cohen, et al., and Stoltz, et al.

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