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MHD modeling and synthetic radiographs for high-energy-density plasma flows in shock-shear targets[1] YINGCHAO LU, Rice University and Los Alamos National Laboratory, SHENGTAI LI, HUI LI, KIRK FLIPPO, Los Alamos National Laboratory, DAN BARNAK, Laboratory for Laser Energetics, ANDREW BIRKEL, BRANDON LAHMANN, CHIKANG LI, Massachusetts Institute of Technology, ALEXANDER RASMUS, KWYNTERO KELSO, CODIE YOSHIKO FIEDLER KAWAGUCHI, Los Alamos National Laboratory, ALEX ZYLSTRA, Lawrence Livermore National Laboratory, EDISON LIANG, Rice University, PETROS TZEFERACOS, University of Rochester, DON LAMB, University of Chicago, JACOPO SIMONI, JEROME DALIGAULT, Los Alamos National Laboratory — Three-dimensional FLASH simulations are carried out to study the hydrodynamics and magnetic fields in the shock-shear derived platform. Simulations indicate that fields of tens of Tesla can be generated via the Biermann battery effect due to vortices and mix in the counterpropagating shock-induced shear layer. Synthetic proton radiography simulations using MPRAD and synthetic X-ray image simulations using SPECT3D are carried out to predict the observable features in the diagnostics.

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