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Simulation of Experiments Generating Collisionless Shocks With Intense Lasers Using the CRASH Code[1] M.J. GROSSKOPF, R.P. DRAKE, C.C. KURANZ, E.M. RUTTER, U. of Michigan, H.S. PARK, N.L. KUGLAND, S. POLLAINE, J.S. ROSS, B.A. REMINGTON, D. RYUTOV, LLNL, A. SPITKOVSKY, L. GARGATE, Princeton University, G. GREGORI, A. BELL, C. MURPHY, University of Oxford, Y. SAKAWA, Y. KURAMITSU, H. TAKABE, Osaka University, D.H. FROULA, G. FIKSEL, Laboratory for Laser Energetics, F. MINIATI, ETH Science and Technology University, M. KOENIG, A. RAVASIO, Ecole Polytechnique, E. LIANG, Rice University, N. WOOSLEY, University of York — Collisionless shocks, shocks generated by plasma wave interactions in regions where the collisional mean-free-path for particles is long compared to the length scale for shock interaction, are found ubiquitously in astrophysics. Experiments to investigate collisionless shocks in a laboratory-scale system are being carried out on intense lasers; measuring the density, temperature, magnetic field, and velocity of counter-streaming flows generated by laser ablation. This poster reports hydrodynamic simulations modeling the ablative flow of plasma generated in order to assess potential designs and infer properties of collected data from previous single foil experiments.

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