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Towards a turbulent magnetic dynamo platform KIRK FLIPPO, ALEXANDER RASMUS, HUI LI, SHENGTAI LI, Los Alamos National Laboratory, CAROLYN KURANZ, JOSEPH LEVESQUE, SALLEE KLEIN, University of Michigan, PETROS TZEFERACOS, University of Chicago — It is known through astronomical observations that most of the Universe is ionized, magnetized, and often turbulent and filled with jets. One theorized process to create strong magnetic fields and jets is the turbulent magnetic dynamo. The magnetic dynamo is a fundamental process in plasma physics, taking kinetic energy and converting it to magnetic energy and is very important to planetary physics and astrophysics. We report on recent Omega EP experiments to produce platform with a turbulent plume of magnetized material with which to study the turbulent magnetic dynamo process. The laser interaction with the target can seed magnetic fields that can be advected into the plume and amplified to saturation by the turbulent magnetic dynamo process. The experimentally measured plume characteristics are compared to hydro code calculations.

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