

Abstract Submitted
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Kelvin-Helmholtz Instability in a Sheared Flow Actuated by a Magnetic Field¹ SANDRA WRIGHT, RADU PRESURA, STEPHAN NEFF, CHRISTOPHER PLECHATY, DAVID MARTINEZ, Nevada Terawatt Facility, University of Nevada, Reno — The Kelvin-Helmholtz instability can lead to plasma transport across a magnetic field; one example is the solar wind transport across the earth's magnetotail. In an experiment done at the Nevada Terawatt Facility, we observed the Kelvin-Helmholtz instability using a laser produced plasma flowing across an external magnetic field. This instability is evidenced by the presence of evenly spaced vortices on the boundary parallel to the normal to the laser target. Due to the interaction with the external magnetic field, a velocity gradient perpendicular to the plasma velocity forms at this boundary. The presence of vortices in a region of sheared flow indicates the development of the Kelvin-Helmholtz instability. The details of the mechanism producing the sheared flow and the resulting instability will be discussed.

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