

Abstract Submitted
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Wandering magnetic field lines, turbulence and laboratory flux ropes¹ T. INTRATOR, J. SEARS, LANL, A. LAZARIAN, Univ. Wisconsin — Understanding the dynamics of flux ropes and their mutual interactions offers the key to many important solar phenomena including magnetic reconnection and turbulence. Kink dynamics and bursty driven dissipative reconnection processes may be important for example in the heating of the solar corona, bursty bulk flows, and magnetotail turbulence. Tangled magnetic field lines are ubiquitous, for example on the sun from differential solar rotation, in the corona, and in the magnetotail. We believe isolated X-lines in 3D space can generate jets and bursty bulk flows. Astrophysical weak MHD turbulence and 3D reconnection are likely related. There is little or no laboratory work on possible links between reconnection and turbulence, or the dynamics of intermittent, unsteady reconnection. We take advantage of a unique collaboration between a LANL experiment and theory- computational capabilities at Univ Wisconsin and LANL, to shed light on the link between magnetic reconnection and turbulence.

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