

Abstract Submitted
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FLARE: A New User Facility for Studies of Multiple-Scale Physics of Magnetic Reconnection and Related Phenomena Through *in-situ* Measurements HANTAO JI, A. BHATTACHARJEE, A. GOODMAN, S. PRAGER, Princeton U., W. DAUGHTON, LANL, R. CUTLER, W. FOX, F. HOFFMANN, M. KALISH, T. KOZUB, J. JARA-ALMONTE, C. MYERS, Y. REN, P. SLOBODA, M. YAMADA, J. YOO, PPPL, S.D. BALE, UC-Berkeley, T. CARTER, S. DORFMAN, UCLA, J. DRAKE, U. Maryland, J. EGEDAL, J. SARFF, J. WALLACE, U. Wisconsin — The FLARE device (Facility for Laboratory Reconnection Experiments; flare.pppl.gov) is a new laboratory experiment under construction at Princeton for the studies of magnetic reconnection in the multiple X-line regimes directly relevant to space, solar, astrophysical, and fusion plasmas, as guided by a reconnection phase diagram [Ji & Daughton (2011)]. The whole device have been assembled with first plasmas expected in the fall of 2017. The main diagnostics is an extensive set of magnetic probe arrays, currently under construction, to cover multiple scales from local electron scales (~ 2 mm), to intermediate ion scales (~ 10 cm), and global MHD scales (~ 1 m), simultaneously providing *in-situ* measurements over all these relevant scales. The planned procedures and example topics as a user facility will be discussed.

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