

Abstract Submitted
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Measurements of particle heating and acceleration during magnetic reconnection in EMHD regime¹ QIAOFENG ZHANG, JINLIN XIE, FEIBIN FAN, LONGLONG SANG, QUANMING LU, GE ZHUANG, WEIXING DING, University of Science and Technology of China, Hefei 230026, China — Magnetic reconnection provides a physical mechanism for fast conversion from magnetic energy to plasma kinetic energy. Particle heating and acceleration measurements are important to understand this process. The magnetic reconnection is investigated on linear magnetic plasma device, where time-varying currents through two parallel aluminum rods produce a magnetic reconnection configuration. Electron energy distribution function (EEDF) is measured by energy grid analyzer, and ion velocity distribution function (IVDF) is measured by laser induced fluorescence (LIF) in argon plasmas. The evolutions of EEDF and IVDF during the reconnection process will be presented. Also the relevance to the different background plasma parameters and in-flow drives will be given.

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