

Abstract Submitted  
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**Modeling of ion heating in RFPs at sawtooth crash.**<sup>1</sup> VLADIMIR SVIDZINSKI, VLADIMIR MIRNOV, STEWART PRAGER, University of Wisconsin-Madison and the Center for Magnetic Self-Organization in Laboratory and Astrophysical Plasmas — Strong ion heating is observed in the reversed field pinch (RFP). During a sawtooth crash in the Madison Symmetric Torus RFP the ion temperature can spontaneously double in 100 microseconds. It is also observed that high Z impurities are heated stronger than bulk ions. The possibility of ion heating due to tearing instabilities is examined. Heating scenarios due to viscous damping of strongly localized perpendicular and parallel flows occurring in the vicinity of resonant surface in tearing mode are considered. Flow amplitudes are estimated from nonlinear resistive MHD modeling. The heating rate is found by solving the kinetic equation with Landau collision operator. The results of the study will be presented.

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