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Study of electron acceleration in the reconnection current sheet via TS-4 particle trajectory calculations PATRICK COPINGER, MICHIAKI INOMOTO, YASUSHI ONO, Dept. of Electrical Engineering, University of Tokyo, Tokyo 113-8656, Japan — Particle acceleration during reconnection has remained a challenging problem in the study of solar flares in part due to a lack of direct measurements. The TS-4 (Tokyo University Spherical Torus) device, however, allows for in depth reconnection study through the merging of two plasma tori. Measurements of particle acceleration phenomena such as energy analysis in the TS-4 are difficult compared to measurements of the 2-D magnetic probe array on the R-Z plane. Hence, particle trajectories are simulated using magnetic probe data to provide a preliminary examination of particle acceleration during reconnection. Electron acceleration in the reconnection current sheet is found for a number of configurations. Last, future experimental direction is discussed.

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