Abstract Submitted
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DOLI-II upgrades at UW-Madison[1] PEIXUAN LI, NOAH HERSHKOWITZ, Dept. of Engineering-Physics, University of Wisconsin-Madison, GREG SEVERN, Dept. of Physics & Biophysics, University of San Diego — The upgrade of the triple plasma device at the University of Wisconsin-Madison is close to being finished. The device consists of two outer plasma source chambers and a central chamber with biased grids placed in between. Plasma is produced in each outer chamber by thermionic electrons which are emitted from negatively biased filaments. Permanent magnet line cusps were placed around each chamber to trap the ionizing electrons. The device can be used to study double layer structures and nonlinear wave propagation. Diagnostic tools such as Langmuir probes and emissive probes are used to take measurements of plasma parameters. New upgrades include laser-induced fluorescence and Mach probe diagnostics to directly measure ion speed. The initial design and construction of this device was discussed by Justin Kim et al. at the 56th APS-DPP conference. The latest device status will be presented at this meeting.

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Gregory Severn
Univ of San Diego

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