

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Characterizations of Scrape-Off-Layer Currents on HBT-EP Using Movable, Current Sensing Tiles¹ A. SAPERSTEIN, J.P. LEVESQUE, Y. WEI, I.G. STEWART, M.E. MAUEL, G.A. NAVRATIL, Columbia University — Characterizations for the scrape-off-layer currents (SOLCs) have been made at HBT-EP using SOLC sensor tiles attached to movable walls, acting as poloidally segmented limiting surfaces. The segmentation allows for high resolution characterization of the poloidal structure of SOLCs, and the retractable shells allows for fine scans of their radial structure. SOLC measurements during MHD activity correlate well with those made by magnetic diagnostics, and their temporal structure can appear to be more spikey than the sinusoidal nature of the magnetics. The response of the SOLC sensors to applied 3D magnetic control coils has also been investigated, comparing the effects of low frequency pulses, static/rotating RMPs, and feedback. Rotating RMPs have also been used to show how the current collected by these tiles depends on the MHD mode frequency and amplitude. Lastly, we report on the installation of new set of inboard SOLC sensors, as well as another set of outboard SOLC sensors that complement the ones installed previously. The HFS sensors allow for better characterization of SOLCs during disruptions, and the designs for the complimenting set of LFS sensors have been modified to improve their performance. Comparisons to theoretical models are also made.

¹Supported by U.S. DOE Grant DE-FG02-86ER53222

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Date submitted: 02 Jul 2019

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