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Mitigation of RF sheaths with insulating side walls[1] GURLEEN BAL, University of California, Los Angeles, BART VAN COMPERNOLLE, General Atomics- San Diego, MIKE MARTIN, LAM Research, WALTER GEKELMAN, PAT PRIBYL, TROY CARTER, University of California, Los Angeles — A single strap, high-power (∼150kW), RF (2.4MHz) antenna was used to study RF sheaths in a magnetized helium plasma with plasma parameters n_e ˜10^{18} – 10^{19} m^{-3}, T_e ˜1 – 10 eV and B_0 ˜0.1 T. The experiment was conducted on the Large Plasma Device (LAPD). This presentation will draw a comparison between two experiments carried out at the LAPD with different antenna strap enclosures. The two different enclosure consisted of different materials for enclosure side walls- copper and electrically insulating, macor. Both experiments had similar plasma density, temperature, magnetic field and fast wave amplitude. In the case of the copper enclosure, formation of convective cells as a result of plasma potential rectification was observed and reported[1]. In the experiments with the macor enclosure we observe a lack of plasma potential rectification as well as no evidence of convective cells. The results are reminiscent to the results obtained in ASDEX-U with the 3-strap antenna optimized to reduce image currents on the antenna limiters[2]. [1] M. Martin *et al*, Phys. Rev. Lett. **119**, 205002 (2017) [2] V. Bobkov *et al*, Nucl. Fusion **56**, 084001 (2016)

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