

Plasma flow due to a loss cone distribution centered around the outboard edge in DIII-D

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Abstract

Recent Mach probe measurements of the bulk ion toroidal velocity near the last closed flux surface in DIII-D [Müller S H *et al* 2011 *Phys. Rev. Lett.* **106** 115001] are consistent with the existence of a loss cone distribution in velocity space, as described previously [deGrassie J S *et al* 2009 *Nucl. Fusion* **49** 085020], predicting a co- I_p directed velocity localized to the edge. The former model has been extended into the scrape off layer and takes into account limiting surfaces, and is also extended to include the effect of a uniform radial electric field with magnitude and sign relevant for measurements in the edge of DIII-D H-mode conditions. These added effects modify the details but do not wash out the basic model-computed velocity profile.

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