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Kinetic modeling of sheath/presheath of a magnetized plasma
XIANZHU TANG, ZEHUA GUO, YING WANG, GIAN LUCA DELZANNO, Los Alamos National Laboratory, JOHN CANIK, Oak Ridge National Laboratory — An initial plan for the PSI SciDAC project is to use the experimental results from linear devices to develop and validate a predictive modeling capability of redeposition. This involves fluid modeling of the PISCES plasma by SOLPS, and kinetic modeling of the sheath/presheath by VPIC. Here we describe the kinetic modeling results of the sheath/presheath in a PISCES plasma, with an emphasis on the fluid moments at the sheath entrance that serve as the boundary condition for the SOLPS code. These include the plasma flow, and the electron and ion energy fluxes, which are typically modeled by energy transmission coefficient in fluid codes. A comparison of the sheath with magnetic field normal and oblique to the wall will also be given, along with the different behavior of prompt redeposition in these two cases. *Work supported by OFES and OASCR*

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