

Abstract Submitted
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Full wave modeling of off-axis LHCD using the LHEAF code on Alcator C-Mod¹ S. SHIRAIWA, O. MENEGHINI, PSFC, MIT, S. SCOTT, PPPL, R.R. PARKER, G. WALLACE, S. WOLFE, PSFC, MIT, ALCATOR C-MOD TEAM — We will present LHEAF full wave simulation results of Alcator C-Mod LHCD experiments. LHEAF is a full wave simulation code for LHCD based on the finite element method, which allows simulations of the hot core plasma, the SOL plasma, and the launcher in a seamless manner. The LHEAF Fokker-Planck module has been upgraded to a 3D Fokker-Planck code to compare code results with Alcator C-Mod experiments. Simulation results of stable LHCD discharges show good agreement with the current profile obtained by an equilibrium reconstruction. On the other hand, the code predicts hollower current profile than observed on the discharges which had $n=1, m=2$ MHD instabilities, implying that those instabilities limited further broadening of the current profile. We will also discuss interesting wave spectrum broadening observed in code simulations in the multipass regime, which may be difficult to reproduce using a traditional ray tracing technique.

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Syun'ichi Shiraiwa
PSFC, MIT

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