

Abstract Submitted
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Full Wave Simulations of Alfvén Waves in the Large Plasma Device¹ KUNAL SANWALKA, TROY CARTER, STEVE VINCENA, JEFFREY ROBERTSON, University of California, Los Angeles, JOHN WRIGHT, SYUNICHI SHIRAIWA, MIT Plasma Science and Fusion Center, NICOLA BERTELLI, Princeton Plasma Physics Laboratory — A full wave solver is used to simulate the propagation of shear Alfvén waves in the Large Plasma Device (LAPD). The Petra-M code is used to directly solve Maxwell's equations with realistic antenna and experimental geometry, that is, spatially varying density and magnetic field under the cold plasma approximation. Petra-M is a finite element analysis software developed using the MFEM partial differential equation solver library. Simulations of the LAPD were done to investigate antenna coupling, propagation of shear waves into axial gradients of the Alfvén speed, and generation and propagation of shear waves in multi-ion species plasmas.

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