

Abstract Submitted
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Whistler Wave Resonances in Laboratory Plasma¹ BILL AMATUCCI, DAVID BLACKWELL, Naval Research Laboratory, ERIK TEJERO, CHRISTOPHER COTHRAN, Global Strategies Group NA, LEONID RUDAKOV, Icarus Research, GURUDAS GANGULI, Naval Research Laboratory, DAVID WALKER, Global Strategies Group NA — Standing whistler wave patterns have been investigated in the Naval Research Laboratory's Space Physics Simulation Chamber. In the original experimental configuration, partial reflection of the antenna-launched whistler waves from the chamber end boundaries occurs, setting up a combination of standing and traveling waves. By controlling the axial magnetic field strength profile, cyclotron absorption of the whistler waves can be induced before reflection occurs, leaving only the forward propagating waves. By comparing standing wave amplitudes to that when the wave is prevented from reflecting, cavity Q 's in excess of 30 have been observed. Under uniform axial magnetic field conditions, the addition of planar conducting grids across the vacuum chamber cross-section at the ends of the plasma column provides improved reflecting surfaces and corresponding increases in the value of Q .

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