

Abstract Submitted
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Sorting Category: 5.1.1.2 (Theoretical)

**Sensitivity of Calculated Electron Cyclotron Current
Drive to Variations of Parameters Around DIII-D Tokamak
Conditions**¹

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T.C. LUCE, R. PRATER, General Atomics — Off-axis Electron Cy-
clotron (EC) Current Drive (CD) efficiency in the DIII-D tokamak has
been observed² to exceed calculated results obtained from axisymmetric,
Fokker-Planck theory.³ This study reports on calculated current result-
ing from variations of plasma parameters around the measured profiles,
to assess the differences required to bring theory into conformity with
experiment. Alternatively, and presently without a theoretical basis, the
strength of the quasilinear diffusion coefficient D_{ql} has been varied from
theory. A factor of ≈ 2 increase in D_{ql} increases central CD by 30%
but increases mid-radius CD by a factor of 5, giving agreement between
experiment and calculation within the error bars.

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and Grant DE-FG03-99ER54541.

²T.C. Luce *et al.*, IAEA Fusion Energy Mtg., Japan, 1998.

³R.W. Harvey and M.G. McCoy, IAEA TCM on Advances in Simulation
and Modeling of Thermonuclear Plasmas, Montréal, 1992, p. 527 (IAEA,
Vienna, 1993).

Prefer Oral Session
Prefer Poster Session

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Special instructions: DIII-D Poster Session 2, immediately following TA Casper

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