

Abstract Submitted
for the DPP00 Meeting of
The American Physical Society

Sorting Category: 6.1.0 (Theoretical)

Comparison of Observed Toroidal Rotation with Neo-classical Transport Theory S.K. WONG, V.S. CHAN, F.L. HINTON, General Atomics — Toroidal rotations have been observed in Ohmic and ICRF discharges¹ which have little overall momentum input. They are found to correlate with the thermal energy content and the magnitude of the plasma current and change sign relative to the plasma current in different conditions. Existing comparisons with neo-classical transport theory either focus on the relation of the rotation with the radial electric field or fail to use the full expression of the angular momentum flux. We seek to remedy this by invoking the correct expressions^{2,3,4} which contain both diffusive and non-diffusive terms. Developmental work is performed to consider such issues as the presence of impurity ions, the occurrence of near-sonic flows, and the lack of up-down symmetry of flux surfaces. Comparison with experiments will be presented.

¹J.E. Rice *et al.*, Nucl. Fusion **39** (1999) 1175.

²M.N. Rosenbluth *et al.*, Plasma Phys. Contr. Nucl. Fusion Research (IAEA, Vienna, 1971), Vol. 1, p. 495.

³R.D. Hazeltine, Phys. Fluids **17** (1974) 961.

⁴F.L. Hinton and S.K. Wong, Phys. Fluids **28** (1985) 3082.

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Prefer Oral Session

Prefer Poster Session

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Date submitted: July 12, 2000

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