

Abstract Submitted
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Exact canonical drift Hamiltonian formalism with pressure anisotropy and finite perturbed fields GUY A. COOPER, University of the South, Sewanee, TN 37383 and Ecole Polytechnique Federale de Lausanne CRPP, Association Euratom-Suisse, Lausanne, Switzerland, MARTIN JUCKER, W. ANTHONY COOPER, JONATHAN GRAVES, Ecole Polytechnique Federale de Lausanne CRPP, Association Euratom-Suisse, Lausanne, Switzerland, MAXIM ISAEV, Nuclear Fusion Institute, RRC Kurchatov Institute, Moscow, Russia — A Hamiltonian formulation of the guiding center drift orbits is extended to pressure anisotropy and field perturbations in axisymmetric systems. The Boozer magnetic coordinates are shown to retain canonical properties in anisotropic pressure plasmas with finite electrostatic perturbations and electromagnetic perturbed fields that affect solely the parallel component of the magnetic vector potential. The equations of motion developed in the Boozer coordinate frame are satisfied exactly by direct verification of the drifts.

W. Anthony Cooper
Ecole Polytechnique Federale de Lausanne, Lausanne, Switzerland

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