

Gyrokinetic Theory in the White-Chance-Boozer Coordinates

S.C. Chiu,* V.S. Chan, Y.R. Lin-Liu and Y. Omelchenko

ABSTRACT: The noncanonical Lagrangian theory of guiding center orbits is applied to the coordinate system of White-Chance-Boozer. The result is a generalized set of equations of motion which eliminates certain approximations of the static field and includes the effects of large rotations and high frequency waves. A quasi-linear gyrokinetic theory is shown to readily follow from these equations.

*Sunrise R&M, San Diego, California.