

The Local Limit of Global Gyrokinetic Simulations

J. Candy* and R.E. Waltz

General Atomics, P.O. Box 85608, San Diego, CA

W. Dorland

University of Maryland, College Park, MD

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Abstract

Global gyrokinetic simulations of turbulence include physical effects that are not retained in local flux-tube simulations. Nevertheless, in the limit of sufficiently small ρ_* (gyroradius compared to system size) it is expected that a local simulation should agree with a global one (at the local simulation radius) since all effects that are dropped in the local simulations are expected to vanish as $\rho_* \rightarrow 0$. In this note, we show that global GYRO simulations of a well-established test case do in fact recover the flux-tube limit at each radius.

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*URL: <http://web.gat.com/comp/parallel>