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

(Dated: November 13, 2003)

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 \( \rho_* \) (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 \( \rho_* \to 0 \). 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.

PACS numbers: 52.30.Gz, 52.35.Qz, 52.65.-y, 52.65.Tt

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