

Abstract Submitted
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Study of no-man's land physics in the total-f gyrokinetic code XGC1 SEUNG HOE KU, C.S. CHANG, J. LANG, Princeton Plasma Physics Laboratory — While the “transport shortfall” in the “no-man's land” has been observed often in delta-f codes, it has not yet been observed in the global total-f gyrokinetic particle code XGC1. Since understanding the interaction between the edge and core transport appears to be a critical element in the prediction for ITER performance, understanding the no-man's land issue is an important physics research topic. Simulation results using the Holland case [1] will be presented and the physics causing the shortfall phenomenon will be discussed. Nonlinear nonlocal interaction of turbulence, secondary flows, and transport appears to be the key.

[1] C. Holland et al., *Physics of Plasmas* 16 052301 (2009)

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