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Gyrokinetic simulations with a general equilibrium distribution function GEORGE WILKIE, University of Maryland, EDMUND HIGHCOCK, IAN ABEL, Oxford University, WILLIAM DORLAND, University of Maryland — Applying the gyrokinetic framework to study the dynamics of fast particles requires a transport-scale equilibrium distribution that is not Maxwellian, and whose functional form may not be known a priori. The GS2 gyrokinetics code has been modified to accommodate an arbitrary equilibrium distribution and this capability has been validated. The need to resolve the tail of the distribution for fast particles introduces numerical challenges that are resolved by implementing a generalized quadrature scheme that retains spectral accuracy of velocity-space integrals. Preliminary simulation results are presented.

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