Wavelet analysis of gyrokinetic turbulence INGMAR BROEM-
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WILLIAM DORLAND, Dept. of Physics, Univ. of Maryland — A method to ex-
tract coherent structures out of the data from a gyrokinetic simulation. The data
is generated with GS2, which is a nonlinear kinetic code that studies low-frequency
turbulence in magnetized plasma. We analyze data from simulations of ion tem-
perature gradient-driven (ITG) turbulence, for a range of physics parameters. The
parameters are chosen to produce a strong variation in the amplitude of nonlinearly
generated zonal flows. To find coherent structures, the data is projected onto an or-
thogonal wavelet basis, a nonlinear thresholding is applied to the wavelet coefficients
and the denoised data is then reconstructed in physical space.

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