Benchmarking finite- β ITG gyrokinetic simulations[1] A.M. DIM-
ITS, W.M. NEVINS, LLNL, J. CANDY, GA, San Diego, C. HOLLAND, UCSD,
N. HOWARD, MIT — We report the results of an electromagnetic gyrokinetic-
simulation benchmarking study based on a well-diagnosed ion-temperature-gradient
(ITG)-turbulence dominated experimental plasma. We compare the 4x3 matrix
of transport/transfer quantities for each plasma species; namely the (a) particle
flux, Γ_a, (b) momentum flux, Π_a, (c) energy flux, Q_a, and (d) anomalous heat
exchange, S_a, with each transport coefficient broken down into: (1) electrostatic
($\delta\varphi$) (2) transverse electromagnetic ($\delta A_\parallel$), and (3) compressional electromagnetic,
($\delta B_\parallel$) contributions. We compare realization-independent quantities (correlation
functions, spectral densities, etc.), which characterize the fluctuating fields from
various gyrokinetic simulation codes.

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