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Projection of Saturated Nonlinear Gyrokinetic Distribution Functions onto Linear Eigenmodes DAVID HATCH, University of Wisconsin - Madison, PAUL TERRY, University of Wiscosnsin - Madison, WILLIAM NEVINS, LLNL, FRANK JENKO, IPP Garching — It is becoming increasingly apparent that the dynamics of plasma microturbulence are determined by the interaction of multiple linear eigenmodes, largely in the wavenumber range of the instability. This can occur both when multiple unstable modes interact and when stable eigenmodes are excited, facilitating saturation and reducing transport. The GENE code is equipped with an eigenmode solver making it possible to reveal the properties of more than just the most unstable eigenmode. In limited cases it is possible to project a nonlinear distribution function onto the complete gyrokinetic eigenmode basis. In more general cases, the contribution of multiple eigenmodes can be determined by use of elements of the reciprocal dual basis. Results of such eigenmode projections will be presented, and the effect of stable eigenmodes on saturation will be discussed.

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