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Evidence for Reynolds-Stress Driven Shear Flows Using Bispectral Analysis[1] C. HOLLAND, G.R. TYNAN, P.H. DIAMOND, R.A. MOYER, M.J. BURIN, Mechanical and Aerospace Engineering Dept. University of California, San Diego — Spontaneous shear flow generation in magnetized fusion plasmas is thought to occur by an interaction of the turbulent Reynolds stress with the shear flow. In this paper we discuss the theory of mean flow generation when described via the bispectrum. Predictions from this theory are then compared with results from simple numerical simulations of plasma turbulence. Finally, we present results from analysis of edge fluctuations from DIII-D during an L-H transition. These results indicate a transient rise and fall of three-wave coupling localized to inside the separatrix. Future work is also discussed.

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