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Experimental Study of Nonlinear Energy Transfer in Frequency Domain MIN XU, CHRIS HOLLAND, STEFAN MULLER, GEORGE TYNAN, ZHENG YAN, JONATHAN YU, UCSD Center For Energy Research — The transfer of turbulent energy between different fluctuation scales is of great interest to obtain an understanding of the development of turbulence and formation of turbulent-driven shear flows in magnetized plasmas. Under some conditions, different spatial scales can generally be associated with different frequency scales, and thus the study of turbulent energy transfer in the frequency domain is also of interest. Based on the turbulent plasma continuity and momentum equations, the nonlinear internal and kinetic energy transfer terms can be explicitly measured in experiment. First attempt aimed at measuring these energy transfer terms have been carried out by using a 9-tip Langmuir probe array in the CSDX linear plasma device. Initial results from this work are reported in this poster.

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