

Abstract Submitted  
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**Characterization of Low frequency zonal flow in linear magnetized plasma**<sup>1</sup> JINLIN XIE, RAN CHEN, TAO LAN, ADI LIU, WANDONG LIU, CHANGXUAN YU, CAS Key Laboratory of Basic Plasma Physics, Department of Modern Physics, University of Science and Technology of China, Hefei, China 230026 — A low frequency, poloidally symmetrical potential structure that peaks near zero frequency is observed in a steady linear magnetized plasma device. The complete 3D spectral features of this structure have been identified to have the characteristics expected for the low frequency zonal flow (LFZF). The analysis of the nonlinear interaction between the LFZF and ambient drift turbulence suggests that the LFZF may be generated in energy-conserving nonlinear interactions with the turbulence. The LFZF frequency bandwidth is found to scale inversely with the square root of the ion mass, which implies that the collisional damping mechanism dominates the saturation of the LFZF in our case.

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