

Abstract Submitted
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**Self-Regulation Dynamics of Drift Wave-Zonal Flow Turbulence
in a Linear Magnetized Plasma¹** JINLIN XIE, RAN CHEN, CHANGXUAN

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— The Low-Frequency Zonal Flow is studied experimentally with the Langmuir probe arrays in a linear magnetized plasma device. In a weakly developed drift turbulence, the 3D mode characteristics of $m \simeq n \simeq 0$, $k_r \simeq 0.16\text{cm}^{-1}$ and a very near-zero mode frequency are obtained through spectrum analysis, indicating the feature of zonal flow. The three-wave coupling between ZF and AT is shown through bispectrum analysis. Furthermore, the self-regulation dynamics are studied in such a drift wave-zonal flow (DW-ZF) turbulence through changing axial magnetic field, accompanying with the change of turbulence energy. Finally, the shearing effect of the DW by the ZF is also examined.

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