



IAEA FEC 201

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## **Residual Stress and Momentum Transport in Electromagnetic ITG Turbulence**

*Wednesday, 19 October 2016 08:30 (4 hours)*

We study how electromagnetic (EM) fluctuations impact on residual Reynolds stress in the context of the quasi-linear theory. Two-fluid model is employed to describe EM ion temperature gradient turbulence. Analyses show that not only the conventional parallel residual stress but also additional stress due to EM fluctuations strongly increase with plasma beta (=plasma thermal energy/magnetic energy), potentially leading to the strong enhancement of flow generation in high beta plasmas. We identify that this strong increase of residual stress originates from the reinforcement of radial  $k$  (=spectrally averaged parallel wavenumber) asymmetry due to the deformation of eigenfunctions near a rational surface.

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Republic of Korea

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