

Abstract Submitted
for the DPP19 Meeting of
The American Physical Society

Cross phase of drift-resistive plasma fluctuations¹ CHANG-BAE KIM, Soongsil University — Knowledge of the cross phases between the fluctuations is crucial in the turbulent transport of the plasma particles and the thermal energy. The cross phase plays an important role in the determination of the turbulence level because the fluctuations in the drift plasma turbulence are driven by the turbulent fluxes across the plasma profiles. In the presentation the cross phase between the electrostatic potential and the electron density is analyzed based on the numerical simulations of the two-dimensional Hasegawa-Wakatani model. In the presence of the zonal flow V (ZF) the cross phase δ is strongly distorted by the ZF. Where the flow curvature V'' (the gradient of the zonal vorticity) is positive, δ is reduced at the saturated state if the electron response is nearly adiabatic. Turbulence is localized where V is in the direction of the electron diamagnetic drift and $V'' > 0$. The cross phase is found negative where the turbulence is weak. Results of two separate numerical simulations of ZF being either sinusoidally imposed or dynamically generated will be discussed at the presentation.

¹Supported by the Korea Research Foundation Grant NRF-2016R1D1A1B03935923

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Date submitted: 31 Aug 2019

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