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TH/P7-11: Advective Flux in Turbulent Plasmas Due to Noise

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Appearance of advective flux in the turbulent plasmas driven by noise is studied numerically. The noise is assumed to be delta-correlated in time and to have anisotropic component so that a reflection symmetry is not obeyed along y direction. Numerical simulations are performed for a two-dimensional model of Hasegawa-Mima equation (HME). It is found that, under uv forcing, the induced flux density is anisotropic so that while it is random along y, it is not along the perpendicular direction x and that the flux is advective with the velocity being proportional to $k^2 \rho_s^2$.

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