

Abstract Submitted
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Plasma instability driven by noise CHANG-BAE KIM, Soongsil University — Plasma response to an external noise is explored in the long-time and-large-scale limit. External noise is assumed to depend on a particular direction that may simulate the strong magnetic field or the gradient of the density and the temperature. The noise is thought to represent the short-scale background turbulence of certain physical origins whose spectrum is a transverse tensor to the wave vector. It is found that noise generates two effects: One is to enhance the dissipation by the isotropic spectrum and the other is a destabilizing term due to the anisotropic part. Depending on the relative strength of the anisotropic noise to the isotropic part the plasma may be unstable for small k modes. Potential relevance to the large-scale flows like the zonal flow and the streamer will be discussed in the presentation.

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