Title: Particle Distribution Functions And their Applications in modelling Space Plasmas Processes

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Abstract:

The kinetic theory of plasma describes the microscopic behavior of plasma interactions and the motions of its constituents. Phase space and distribution function are the basic elements of the kinetic theory of plasma, which are necessary for statistical description. In the talk, I discuss the different types of distribution functions and their properties. These distribution functions make the waves generated in the plasma distinct and the instabilities that cause the generation of this wide variety of waves. Here, I will also be discussing one of the prominent instabilities “electron two-stream instability” leading to the generation of electron-scale waves in plasmas.

References-

[1] Baumjohann and Treuman, Basic Space Plasma Physics.
[2] J.A. Bittencourt, *Fundamentals of Plasma Physics*
[3] Francis F. Chen, *Introduction to plasma physics.*