*4th URSI AT-RASC, Gran Canaria, 19 – 24 May 2024*

# Electron velocity distribution functions in the solar wind

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## 1 Extended Abstract

The solar wind is a supersonic flow of an ionized gas called a plasma. It is comprised of negatively charged electrons and multiple species of positively charged ions. These species are not in thermal or thermodynamic equilibrium [2]. That is, each of the species have different temperatures, $T_s$, and several drift relative to other species. Further, each particle species has multiple subcomponents or populations within. For instance, the three dominant electron populations are the cold, dense core, hot, tenuous halo, and magnetic-field-aligned beam known as the strahl [1].

We discuss observations of electron velocity distribution functions (VDFs) in the solar wind observed by the *Wind* spacecraft near 1 AU. Emphasis will be placed on deviations from isotropic Maxwellian VDFs and the importance of the kinetic features in each subcomponent of the distributions.

## References

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[2] L. B. Wilson III, M. L. Stevens, J. C. Kasper, K. G. Klein, B. Maruca, S. D. Bale, T. A. Bowen, M. P. Pulupa, and C. S. Salem. Erratum: "The Statistical Properties of Solar Wind Temperature Parameters Near 1 au". *Astrophys. J. Suppl.*, 269(62):12, December 2023.