**报告题目**: The multi-scale behaviour of the solar wind: kinetic physics, collisions, and turbulence

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**摘要:** The solar wind is a magnetised plasma and as such exhibits collective plasma behaviour associated with its characteristic spatial and temporal scales. The characteristic length scales include the size of the heliosphere, the collisional mean free paths of all species, their inertial lengths, their gyration radii, and their Debye lengths. The characteristic timescales include the expansion time, the collision times, and the periods associated with gyration, waves, and oscillations. We discuss the multi-scale nature of the solar wind based on in-situ spacecraft measurements and plasma theory. We emphasise that couplings of processes across scales are important for the global dynamics and thermodynamics of the solar wind. These processes include expansion effects, non-equilibrium distribution functions, collisions, waves and turbulence, and kinetic microinstabilities.