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# Observing Turbulence in the Solar Wind from Fluid to Kinetic Scales

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The solar wind is a turbulent magneto-fluid in which the frequency range of variability of plasma and magnetic field parameters extends from the inverse of the solar rotation period to the smallest scales of the order of the ion and electron gyro-frequency.
Mariner II was the first s/c to observe the complex nature of solar wind fluctuations more than 50 years ago. Since then, our capability to observe and understand the phenomenology of these fluctuations considerably augmented thanks to in-situ/remote sensing observations and numerical simulations.
Our heliophysics community pays great attention to study the role that plasma waves/turbulence play in accelerating and heating the wind, fundamental problems of high relevance to astrophysics. However, we still lack a clear view of the physical mechanisms at the basis of energy transport and dissipation in space plasmas.
New and more accurate in-situ measurements are needed. In this respect, the immediate future of space physics is particularly promising thanks to unprecedented in-situ measurements performed by Parker Solar Probe (PSP) and the future Solar Orbiter (SO) from their orbital vantage points.
I will provide a short overview of our understanding of solar wind turbulence, going through a phenomenological description of such a complex phenomenon within different frequency ranges and for different wind speed regimes.

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