Identification of coarse-graining scales of solar wind Alfvenic turbulence via time series of a single point measurement

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Energy cascade and scale-coupling processes in solar wind turbulence have widely been investigated by many authors. Since broadening spectra of the solar wind turbulence usually contain both MHD and ion kinetic scales, adequate coarse-graining scales for MHD approximation is not trivial in the solar wind plasmas. In this presentation, we discuss the identification of coarse-graining scale of Alfvenic turbulence with sub-grid scale modeling (filtering). By using the Taylor hypothesis, time series obtained by a single point measurement is applied to identify the coarse-graining scales. Dependence of the coarse-graining scales on filtering methods and spectra of the turbulence will be demonstrated by using both numerical and observational data.