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# Young solar wind coherent structures from inertial to sub-ion range

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We study intermittency of turbulence in the young solar wind at 0.17 au with NASA/Parker Solar Probe during the first perihelion. We use a merged FIELDS/Search Coil and Fluxgate Magnetometers data for magnetic field, SWEAP/SPC instrument for ions and RFS/FIELDS quasi thermal noise data for electrons to characterize the plasma environment. The merged magnetic waveforms have 3.4 ms time resolution, which allows us to resolve a wide range of scales, going from MHD inertial range to sub-ion range. We apply a wavelet transform to the magnetic waveforms and we observe localized enhancements in power density that form corresponding peaks in Local Intermittency Measure (LIM) going from MHD to kinetic scales. These LIM peaks are not present in the random-phase signal with the same Fourier amplitudes. This indicates the presence of coherent structures in the observed signal. To detect coherent structures at a given timescale, we use the maximum of the random-phase signal LIM at the same scale as a threshold. We observe a variety of coherent events from MHD to kinetic scales. We estimate the filling factor of the structures as well as their minimum variance properties and local topology. The physical connections between intermittency and solar wind heating are discussed.