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Intermittency of Density Fluctuations in Kinetic Scale Solar Wind Turbulence

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There is thought to be a kinetic scale cascade in the solar wind between ion and electron scales. While the magnetic field fluctuations in this range have been measured, and their intermittency properties studied, there have been as yet, no measurements of the intermittency of the density fluctuations here. We present the first such measurements, using the BMSW instrument on the Spektr-R spacecraft. The density fluctuations are strongly non-Gaussian down to electron scales, similar to the magnetic field, and the distribution of large amplitude density structures is consistent with their generation by the kinetic scale cascade. The large amplitude fluctuations form lower dimensional structures, consistent with 2D sheets or 1D filaments.