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## Analysis of Alfvénic flows with Solar Orbiter: particle and magnetic observations down to kinetic scales.

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The magnetic and velocity fluctuations of the solar wind may be strongly correlated. This characterizes the 'Alfvénic' flows. Using the observations of the Proton Alfa sensor (PAS/SWA) and the magnetometer (MAG) onboard Solar Orbiter, we analyze a period of 100 hours of such Alfvénic flows, at different scales. Several parameters of the turbulence are computed (V-B correlation, various spectral indexes, cross-helicity, residual energy). We explore how these parameters may vary with time and characterize different turbulent states of the flow. More specifically, using the unprecedented time resolution of PAS during burst mode, especially its capability to measure 3D distribution functions at time scale below the proton gyroperiod, we study the connection of the turbulence to the dissipation domain and analyze the fine structure of the distribution functions and their evolutions at sub-second scales. The goal is to investigate whether some characteristics of the distributions, as their more or less pronounced temperature anisotropy, may be related to the turbulence parameters and the degree of V-B correlation.

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