



The solar wind between 0.1 and 1 AU: Parker Solar Probe - BepiColombo radial alignment and BepiColombo - ACE magnetic alignment

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At the beginning of September 2020 ACE and BepiColombo spent several hours in an interesting magnetically connected configuration, while at the end of the same month Parker Solar Probe (PSP) and BepiColombo were radially aligned. Being PSP orbiting near 0.1 AU, BepiColombo near 0.6 AU, and ACE at 1 AU, these geometries are of particular interest for investigating the evolution of solar wind properties at different heliocentric distances by observing the same solar wind plasma parcels.

In this contribution we use magnetic field observations from pairs of spacecraft to characterize both the topology of the magnetic field at different heliocentric distances (scalings and high-order statistics) and how it evolves when moving from near-Sun to far-Sun locations. We observe a breakdown of the statistical self-similar nature of the solar wind plasma due to an increase of the intermittency level when moving away from the Sun. These results support previous evidences on the radial dependence of solar wind scaling behavior and can open a novel framework for modeling magnetic field topological changes across the Heliosphere.