Magnetic structure associated turbulence and reconnection in the solar wind

Z. Voros (1), T. L. Zhang (2), M. Volwerk (2), M. Delva (2), M. P. Leubner (1), and R. Bruno (3)
(1) University of Innsbruck, Institute of Astro- and Particle Physics, Innsbruck, Austria (zoltan.voeroes@uibk.ac.at), (2) Space Research Institute, Austrian Academy of Sciences, Graz, Austria, (3) Istituto di Fisica dello Spazio Interplanetario, Rome, Italy

There exists evidence that turbulent fluctuations heat the solar wind plasma. It is also known, that the flux tube texture of solar wind influences the basic properties of turbulence and turbulent heating. Moreover, the sharp directional changes of magnetic field occurring typically across interwoven flux tubes can lead to slow magnetic reconnection and additional heating of the solar wind. Here we identify the signatures of interactions of magnetic structures, turbulence and reconnection. In order to understand the dynamical features of these complex interactions we study the evolution of basic signatures with heliospheric distance.