



Changes of the Solar Wind Quasi-Invariant during the Helios 1 and 2 mission

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The “quasi-invariant” parameter (QI) is defined as the ratio of magnetic energy density to the plasma kinetic energy density. It is a good proxy for the solar activity and shows a high correlation coefficient ($cc > 0.9$) with the sunspot number. We discuss the behavior of QI for the spacecraft Helios 1 (1975-1981) and Helios 2 (1976-1979) between 0.3 and 1 AU. Points of interest are the change with heliospheric distance, the correlation with the activity of the Sun, differences in changes between the magnetic and kinetic energy density, and an improvement of the QI-equation by regarding the alpha-particle abundance. The dataset itself is structured in a way to distinguish between solar wind and Coronal Mass Ejections (CMEs).