FINITE SIZE SCALING IN THE SOLAR WIND MAGNETIC FIELD OBSERVED IN INDIVIDUAL SLOW AND FAST SOLAR WIND INTERVALS

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Statistical properties of the interplanetary magnetic field fluctuations can provide insight in to the solar wind turbulent scaling features. We apply the finite scaling technique, previously employed in Hnat et al. [2002; 2003], to examine the scaling of magnetic field fluctuations as observed by solar wind spacecraft. Unlike previous studies that use very long solar wind intervals, we examine multiple day-long intervals of continuous slow or fast solar wind data that contain no evidence of shocks, discontinuities, or other disturbances. We find that a single scaling coefficient in the slow solar wind is suffcient to collapse the curves into one master curve over the range investigated. However, in the fast solar wind two different scaling ranges are present. We believe the maximum end of the scaling range is on the order of the size of the turbulent driver. These values on the order of 1 to 7 Mkm in the slow solar wind and 2 to 4 Mkm in the fast solar wind. Different correlation scales are found in different intervals of slow solar wind. We speculate that variations of the correlation scales may reflect differing conditions at the coronal source.