

RADIAL DEPENDENCE OF THE HIGH FREQUENCY SPECTRAL BREAK IN SOLAR WIND FLUCTUATIONS

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The radial dependence of the high frequency spectral break of interplanetary magnetic field fluctuations is estimated exploiting radial alignments between MESSENGER and WIND in the inner heliosphere and between WIND and ULYSSES in the outer heliosphere. The total range of heliocentric distances considered extends from 0.42 to 5.3 AU. We found that the frequency break moves to lower and lower frequencies with increasing the radial distance from the sun following a powerlaw dependence. Our results seem to support conclusions from previous studies which require that a cyclotron-resonant dissipation mechanism must participate into the spectral energy cascade together with other possible kinetic noncyclotron-resonant mechanisms.