

# ANOMALOUS TRANSPORT OF MAGNETIC FIELD LINES IN QUASILINEAR REGIME

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In weak magnetic turbulence, the diffusive prediction for the quasilinear spreading of magnetic field lines as a function of the distance  $z$  along the average field requires the existence of a sufficiently short correlation length  $L$ . Releasing the assumption concerning the existence of  $L$ , I will present an analytical proof that, whenever the spectral index of the turbulence does not exactly vanish below the parallel wavenumber  $10/z$ , the transport of the field lines is anomalous (or non-diffusive) on the scale  $z$ . Simple expressions will be derived for the transport exponent  $\alpha$  and coefficient  $D_\alpha$  (defined by a field line spreading equal to  $D_\alpha z^\alpha$ ). This will allow for a quantitative comparison with the prediction of the original quasilinear theory. Some consequences for the dispersion of solar particles in the interplanetary magnetic fields will also be discussed.