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On the reduction of drift coefficients in the presence of turbulence

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Drift effects have long been known to play a significant role in the transport of charged particles in the heliosphere. A turbulent magnetic field is also known to reduce the effects of particle drifts. The exact nature of this reduction is, however, unclear. This study aims to provide some insight into this reduction, and proposes a relatively simple, tractable means of modelling it that provides results in reasonable agreement with extant numerical simulations of the drift coefficient in a turbulent magnetic field. Furthermore, we investigate the possible spatial dependences of this new turbulence-reduced drift coefficient in the heliosphere using the results of a turbulence transport model as inputs, along with comparisons with turbulence-reduced drift coefficients proposed in previous studies.

Apply to be considered for a student award (Yes / No)?

No

Level for award (Hons, MSc, PhD, N/A)?

N/A

Main supervisor (name and email) and his / her institution

N/A

Would you like to submit a short paper for the Conference Proceedings (Yes / No)?

No

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