

Turbulent dynamos

Tuesday 3 March 2020 13:30 (40 minutes)

In the presence of symmetry breakage, turbulence may contribute to suppression of effective transport, counter-balancing its primary effect: enhancement of transport. This dynamic balance leads to a large-scale structure formation: turbulent dynamos. In this talk, firstly, an attempt to theoretically tackle strongly non-linear and inhomogeneous turbulence is presented. Then, the theoretical results are used for constructing a self-consistent turbulent dynamo model beyond the conventional heuristic ad hoc modelling approaches. Finally, astrophysical applications of a dynamo model in strongly compressible magnetohydrodynamic turbulence will be discussed.

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