THE ROLE OF TEMPORAL COHERENCE IN SMALL AND LARGE-SCALE DYNAMOS AT HIGH RM

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Abstract In this paper we shall describe the role of temporal coherence in determining the dynamo properties of flows with a range of spatial scales at high magnetic Reynolds number. We shall examine model problems both theoretically and numerically and describe how flows with strong temporal coherence can win out over incoherent flows. The theory can be used to construct system-scale dynamos, similar to those found in astrophysical objects, even at high Rm