

Abstract Submitted  
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**Cyclic dynamo action in numerical simulation of solar convection**

PAUL CHARBONNEAU, Université de Montréal, PIOTR SMOLARKIEWICZ, MMM/NCAR, MIHAI GHIZARU, Université de Montréal — I will review recent advances in the production of solar-like cyclic variations of a dynamo-generated large-scale magnetic field arising in global MHD simulations of solar convection. After describing a few representative simulations, I will focus on the turbulent nature of the driving electromotive force. Cyclic variations of the large-scale magnetic component appears to hinge on a fine balance between induction by the large-scale flows, and a turbulent electromotive force, the latter surprisingly akin to simple expectations from mean-field electrodynamics. I will also discuss the nature and mode of operation of the mechanisms limiting the growth of the large-scale magnetic field in these simulations.

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