



Kinematic dynamo in spherical Couette flow

Xing Wei (1,2)

(1) ETH at Zurich, Switzerland (xing.wei@erdw.ethz.ch), (2) University of Goettingen, Germany

We investigate numerically the kinematic dynamo driven by spherical Couette flow. We calculate both 2D and 3D flows with two global rotation rates and opposite directions of differential rotation as well as the two magnetic boundary conditions and the two aspect ratios. We find that the azimuthally drifting Rossby wave is crucial to dynamo action. Stronger nonlinear inertial force which induces more complex structure of flow and field facilitates the onset of dynamo. The direction of differential rotation also has the influence on the dynamo action.