

Kinematic dynamos in precession-driven cavities

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It has recently been argued that precession may provide an alternative energy source for the natural dynamos of planets and moons. Using a finite-volume code, we pursue a numerical investigation of precession-driven kinematic dynamos in whole spheroids and spheroidal shells. We find that laminar precession can power a dynamo and that the critical magnetic Reynolds number for the onset of dynamo action is lower if an inner core is present. Finally, we also discuss the spatial structure of the magnetic field.
