SIMPLE TAYLOR STATES COMPATIBLE WITH PRESENT OBSERVATIONS

ANDREW JACKSON 1, Philip Livermore 2. Kuan Li 3. Glenn Ierley

1. Institute of Geophysics, ETH Zurich, Switzerland
2. Scipps Institution of Oceanography, UCSD, La Jolla, CA

Taylor states are magnetic field morphologies in a sphere or shell that obey Taylor's constraint, namely the vanishing of the azimuthal component of the Lorentz torque on every cylinder coaxial with the rotation axis of the Earth. We report on simple models of the internal magnetic field structure in a sphere and a spherical shell that are compatible with morphologies of the magnetic field at the core surface.

Taylor's constraint, dynamo theories

ANDREW JACKSON, Institute of Geophysics, ETH Zurich, Sonneggstr. 5, 8092 Zurich, Switzerland