

Electromagnetic Core-Mantle Coupling with Inhomogeneous Mantle Conductivity Models

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Electromagnetic core-mantle coupling is a candidate for explaining decadal changes of the Earth's length-of-day variation. We adopt this mechanism and azimuthally inhomogeneous mantle conductivity models at the base of the mantle taking into account the existence of the D" layer, and calculate the torque on the mantle generated by the geomagnetic field variation of the core origin. We found considerable differences in the amplitudes of the torque between the case of inhomogeneous models and the homogeneous model.