



## On Geomagnetism and Paleomagnetism I (Paperback)

By Coerte V Voorhies

Bibliogov, United States, 2013. Paperback. Condition: New. Language: English . Brand New Book \*\*\*\*\* Print on Demand \*\*\*\*\*. A partial description of Earth's broad scale, core-source magnetic field has been developed and tested three ways. The description features an expected, or mean, spatial magnetic power spectrum that is approximately inversely proportional to horizontal wavenumber atop Earth's core. This multipole spectrum describes a magnetic energy range; it is not steep enough for Gubbins magnetic dissipation range. Temporal variations of core multipole powers about mean values are to be expected and are described statistically, via trial probability distribution functions, instead of deterministically, via trial solution of closed transport equations. The distributions considered here are closed and neither require nor prohibit magnetic isotropy. The description is therefore applicable to, and tested against, both dipole and low degree non-dipole fields. In Part 1, a physical basis for an expectation spectrum is developed and checked. The description is then combined with main field models of twentieth century satellite and surface geomagnetic field measurements to make testable predictions of the radius of Earth's core. The predicted core radius is 0.7 above the 3480 km seismological value. Partial descriptions of other planetary dipole fields are...



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