Geophysical Research Abstracts, Vol. 7, 03234, 2005 SRef-ID: 1607-7962/gra/EGU05-A-03234 © European Geosciences Union 2005



Geomagnetic jerks: observation, theoretical modeling, and implications

M. Mandea

GeoForschungsZentrum Potsdam (email: mioara@gfz-potsdam.de)

The geomagnetic jerks are generally accepted as events of internal origin, which are usually manifested in the geomagnetic series as sudden changes in the slope of the secular variation of the core field. However, recently it has been speculated they may even be influenced by external signals, or that they may not be detected over the entire globe. Geomagnetic jerks have been theorized to be jumps in acceleration of the fluid motion in the top of the core or created by torsional oscillations in the core, and they have been associated with various geophysical phenomena: from the decadal variation in the LOD and Chandler wobble, to the magnetic poles motion and the observed westward drift, or even to the observed J2 and earthquakes, etc.

Here, the possible approaches to detect geomagnetic jerks in the magnetic series provided by observatories, as well as in the synthetic data obtained from comprehensive models (CM4) are discussed. Considerations are also given to the evidence for correlations with some of the above indicated phenomena, and possible implications.