

## **ELECTROMAGNETIC RESPONSE OF THE EUROPEAN UNDERGROUND TO MAGNETOSPHERIC RING CURRENT VARIATIONS**

VENERA DOBRICA, Crisan Demetrescu

Institute of Geodynamics, Bucharest, Romania

Magnetospheric ring current variations induce a response of the Earth's interior both by magnetic induction in the magnetic rocks above the Curie temperature and by electromagnetic induction in the conductive crustal and mantle structures. Based on a magnetic induction model applied to annual means of vertical component of the geomagnetic field at European observatories, we separate this response in magnetically and electromagnetically induced ingredients. We derive response functions, such as internal/external ratio and inductive scale length, and then we infer the depth and the resistivity of the conducting sphere of the "perfect equivalent conductor" model. The evolution of the response functions in the time interval 1952 – 2000 is discussed as well.

ring current, geomagnetic data, response functions

Venera Dobrica, Institute of Geodynamics, 19-21 J.L. Calderon st., 020032, Bucharest 37, Romania, tel: 0040213172127, fax: 0040213172120, e-mail: [venera@geodin.ro](mailto:venera@geodin.ro)