

## SYNTHETIC APPROACH TO MT ANALYSIS OF LONG PERIOD DATA

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In magnetotelluric analysis of long period data, between 2 hours and 1 Day, the impedance tensor can be seriously influenced by the Sq-variation. The superposition of the plane wave variations arising from Dst and the magnetic daily variation arising from Sq-current results in a polarisation of the magnetic variational field. Our initial study shows that this polarisation is not a problem for the analysis, if there is a significant non-polarized magnetic component in the data. The study now focuses on the polarized part of the magnetic variational field because it contains much more energy which results in better estimates. While a complete and constant polarised field can not be analyzed using a bivariate approach, there are day-to-day changes in the polarisation direction of the daily variations which should allow a bivariate analysis.

To get a better understanding of the effect of Sq-vortex on the impedance tensor, a program is used which generates synthetic magnetic and electric fields using a synthetic and therefore known impedance tensor. The advantage is that every part of the variational-fields are known, hence you can relate the outcome to its excitation.

Sq, polarisation, response function

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