

## Analysis of electromagnetic data by using MT frequency response function, application of geophysical exploration

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Electromagnetic inductive response, produced by electromagnetic variation in ionosphere or magnetosphere, is mainly included in observed electromagnetic data in the earth surface. The inductive response is used for the estimation of resistivity structure such as a MT method. The inductive effect is made by solar activity which varies widely cyclic or irregularly, and the observed electromagnetic data also vary widely. Therefore, the inductive response becomes obstructive factor in analyzing water injection or CO<sub>2</sub> storage experiment in the real field. Recently, we attempt to remove the inductive effect on time-series electromagnetic data by using MT frequency response function. This method is able to estimate inductive effect on time-series electric data from magnetic data, or magnetic data from electric data. If the inductive effect on observed electromagnetic data can be removed by the method, the target signal should be clearly picked out. We will present the results of the analysis of observed MT time-series data.

Keywords: MT method, frequency response function, geophysical exploration, analysis of time-domain data