Accepted Manuscript

Translation algorithm of the apparent conductivity using the frequency-domain electromagnetic method of a magnetic dipole

Xiaoping He, Huajun Wang, Sidi Ma

PII: S0926-9851(17)30459-7

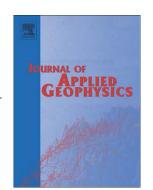
DOI: doi:10.1016/j.jappgeo.2017.09.015

Reference: APPGEO 3341

To appear in: Journal of Applied Geophysics

Received date: 8 May 2017

Revised date: 10 September 2017 Accepted date: 12 September 2017



Please cite this article as: He, Xiaoping, Wang, Huajun, Ma, Sidi, Translation algorithm of the apparent conductivity using the frequency-domain electromagnetic method of a magnetic dipole, *Journal of Applied Geophysics* (2017), doi:10.1016/j.jappgeo.2017.09.015

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Translation algorithm of the apparent conductivity using the frequency-domain electromagnetic method of a magnetic dipole

Xiaoping He, Huajun Wang*, Sidi Ma

School of Earth Sciences, Zhejiang University, 38 Zheda Rd., Hangzhou, Zhejiang 310027, China

E-mails: AmieHe@126.com; huajunw@126.com; msdwings@outlook.com

Corresponding Author: Huajun Wang(huajunw@126.com or wanghj@zju.edu.cn)

Abstract

In this paper, based on the expression of the relative magnetic anomaly for a frequency-domain magnetic dipole in homogeneous half-space under quasi-static conditions, we derive higher-order approximate formulas of the apparent conductivity. At the same time, it is found that there is a translational and expansionary characteristic between the response curve of the relative magnetic anomaly for the frequency-domain magnetic dipole and underground conductivity and observation frequency. Accordingly, we propose a translation algorithm that can directly calculate the apparent conductivity. By processing the data of the theoretical models and the GEM-2 electromagnetic measurement data from the detection of the thickness of Arctic sea ice, we validate the effectiveness of this method. In comparison with the conventional and the higher-order approximate calculation

Download English Version:

https://daneshyari.com/en/article/5787060

Download Persian Version:

https://daneshyari.com/article/5787060

Daneshyari.com