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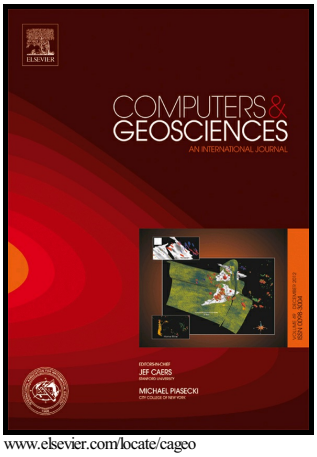

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www.elsevier.com/locate/cageo

PII: S0098-3004(16)30188-1
DOI: http://dx.doi.org/10.1016/j.cageo.2016.07.010
Reference: CAGEO3799

To appear in: *Computers and Geosciences*
Revised date: 8 May 2016
Accepted date: 19

Cite this article as: Majid Jamie, Saeid Mirzaei and Mahmoud Mirzaei, Note or 'EMDPLER: A F77program for modeling the EM response of dipolar source over the non-magnetic layer earth models' by N.P. Singh and T. Mogi, Computers & Geosciences 36 (2010) 430–440, *Computers and Geosciences* http://dx.doi.org/10.1016/j.cageo.2016.07.010

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1. 1. Abstract

In this note some mistakes arising in Singh and Mogi (2010), that are: 1. wrong formulation of the characteristic impedance of the layers of and the TM-mode reflection coefficient of an N-layer earth, 2. using wrong and the very same algorithms for calculation of both TE- and TM- mode reflection coefficients, and 3. using flawed algorithms for computing phase and normalized phase values, are noted and corrected form of these mistakes are presented. Moreover, in order to illustrate how these mistakes can affect forward modeling results, the original and corrected versions of the EMDPLER source code algorithms were conducted on different 2- and 3-layer earth models, the same as the models used in Singh and Mogi (2010), and the real and imaginary parts of the Hz and Hy components of magnetic field, their normalized amplitudes ($\left|H_z/H_{z0}\right|$ and $\left|H_y/H_{y0}\right|$) and the corresponding normalized phase curves are calculated, plotted versus frequency, and compared to each other.

Keywords: TM-mode reflection coefficient; layer earth; characteristic impedance; phase; normalize phase; algorithm; forward modeling

2. 2. Introduction

In applied geophysics, electromagnetic (EM) forward modeling is an important key to understanding complex behavior of the EM wave in heterogeneous media, for doing inverse modeling and also for