SEM033-02   Room: 301B   Time: May 26 14:00-14:15

A combined DCG and OCCAM algorithm for three-dimeensional Magnetotelluric Data

weerachai siripunvaraporn[1*]

[1]ThEP and Mahidol University, THAILAND

OCCAM inversion has been used in various geophysical inversions. Its pros is the stability and robust. However, it consumes very large amount of memory and computational times. WSINV3 DMT is a 3D Magnetotelluric inversion codes based on the OCCAM algorithm but in data space. The transformation from model space to data space helps significantly decreasing the memory requirement and therefore makes it possible to run on a high-end machine. Another scheme has been developed the data space conjugate gradient algorithm, DCG3DMT. DCG3DMT can avoid large memory storage so that it can run on any machines. However, computational operation may be disadvantage to WSINV3DMT. This paper describes a combination of both DCG3DMT and WSINV3DMT together for most efficient inversion. WS3DMT-OCCAM/DCG is based on the OCCAM inversion, but the system of equations is solved by the conjugate gradient method. Numerical experiment shows that the new code require small amount of memory, similar to DCG3 DMT, and converge to the solution similar to the WSINV3DMT.

Keywords: Magnetotelluric, 3D Inversion, data space, Occam