

A proposal for a common MT model format

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SUMMARY

At the Third Magnetotelluric 3D Inversion (MT3DINV3) workshop, which took place at the University of Aldo Moro in Bari, Italy, in mid-May, 2016, it was decided to form a small working group to explore the possibility of developing and establishing a common model format for MT modeling that would become accepted and used by the community. During this workshop, modeling and inversion results were presented based on finite difference, finite element, and integral equation modeling codes, and thus we recognize the inherent difficulty of the task, and the virtual impossibility of being able to accommodate formats used by every single code. Rather, we are proposing the creation of a simple binary model format based on a structured hexahedral (rectangular cuboid) parameterization of the model. This will cover the majority of currently used codes, and will leave the details of mesh design/quality/creation to the user. It was decided at MT3DINV3 that the binary model format should be based on HDF5 (www.hdfgroup.org), because it is an extensible, versatile, portable, and widely used data model that can represent complex data and a wide variety of metadata. Furthermore, software libraries to read/write HDF5 files exist on a wide variety of platforms and can interact with many software languages. A draft proposal was presented at the 2016 EM Induction Workshop, and here we plan to present an updated draft of the proposed format.

Keywords: magnetotellurics, modeling, format, binary
