Advanced processing and inversion of two AEM datasets for 3D geological modelling: the case study of Spiritwood Valley Aquifer

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Abstract

In this short paper we present final results obtained from advanced processing and inversion of AEM data related to AeroTem and VTEM surveys over the same area, Spiritwood Valley, Manitoba, We also present an example of integration of ancillary seismic data into the AEM inversion. In particular, the depth to different layers as interpreted from seismic are added to the inversion to constrain the resistivity model. Furthermore, we compare inversion results with other available ground based geophysical data, focusing on electrical resistivity data collected across seismic lines in order to provide some constraints on the AEM resistivity model. Finally, we outline how these results will be applied to generate an integrated 3D geological model for a quantitative description of the Spiritwood aquifer system.