Processing One-Pass EMI Data at Sites with Magnetic Soils: Recent Examples

Len Pasion, David Sinex, Nicolas Lhomme, Barry Zelt

The use of Advanced Geophysical Classification is particularly challenging at sites with a high level of magnetic soil signal. The spatial variability in magnetic properties, combined with varying instrument offsets from the ground surface, creates a complex background signal that is difficult to subtract or account for. Applying standard target-picking and inversion techniques to these data can result in a high number of false picks due to geological anomalies, inaccurate dipole polarizabilities used for target classification, and spurious dipole models with polarizabilities resembling those in the ordnance library. In this presentation, we provide an overview of the methods we have employed at sites with significant magnetic soil noise. These approaches include jointly solving for target parameters and optimal background signals, as well as methods for identifying models caused by soil.