Methods for Delineating Saturated Response Areas in AGC Data
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This presentation will discuss approaches for delineation of Saturated Response Areas (SRAs) in electromagnetic data acquired for Advanced Geophysical Classification (AGC). SRAs are defined as regions where AGC cannot reliably identify targets of interest in the ground due to spatially extended, elevated signal that precludes estimation of dipole parameters required for classification. This elevated signal can be due to subsurface metallic infrastructure, a high concentration of metallic clutter in the ground, or a magnetic soil response. Two approaches can be taken: data-based SRA delineation uses a gridded image of the data to identify spatially extended areas of elevated response, while model-based delineation relies on a map of anomaly (or source) density to identify SRAs. We will discuss considerations and challenges for both approaches. In particular, these methods require selection of site -specific thresholds (e.g. data amplitudes or source densities), but there is currently no standard procedure for making these decisions. We will show how synthetic seeding can be used to inform selection of SRA decision points and illustrate these methods on example AGC data sets.