

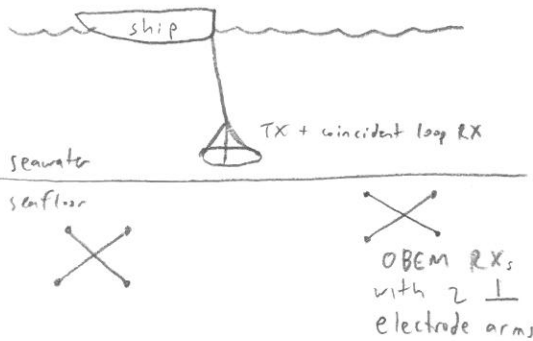
EM for mineral exploration on the seafloor

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1. Setup

- state the problem. draw a picture.

- Explore for massive sulfide Au + Cu mineral deposits on the seafloor
- Inductive source, dipole RX TEM system



2. Properties

- what are the diagnostic physical property contrasts?

- Conductivity
- massive sulfides are very electrically conductive compared to host rock

3. Survey

- where are the sources? receivers? time domain? frequency domain? grounded? inductive?

- Time domain
- towed loop inductive source
- coincident loop RX + array of ocean bottom dipole RXs

7. Synthesis

- how do we combine our interpretation with other knowledge about the problem and make a decision?

- drilling of near-surface conductivity anomalies

6. Interpretation

- what do the results tell us in terms of the geological or geotechnical objectives?

- detection of buried and inactive massive sulfide deposits on the seafloor which may provide economic resource of Au, Ag, Cu, Pb, Zn

5. Processing

- what steps should be taken prior to obtaining an interpretable image?

3D inversion

4. Data

- what are the data? what do you expect to see?

- transient decay curves
- can invert for seafloor conductivity to detect possible mineralized zones