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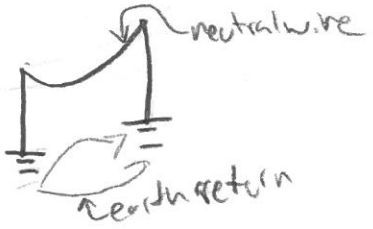
SW-Skywire

Skywire - neutral grounding structure employed by Powerlines for lightning protection

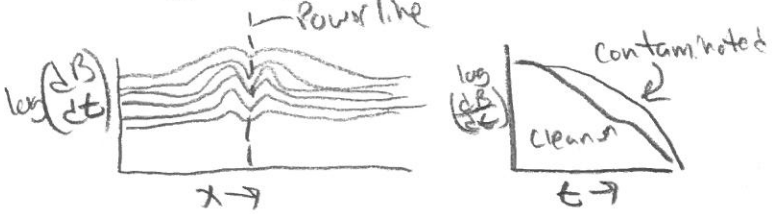
1. Setup
- state the problem. draw a picture.

Powerline problem in AEM data.



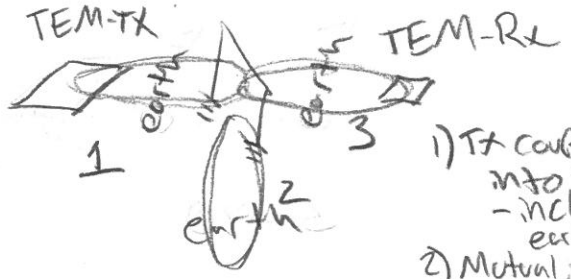
2. Properties
- what are the diagnostic physical property contrasts?

Smoothly elevated $\frac{dB}{dt}$ curves



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

all TEM systems. Let's decouple a TEM system for graphical purposes



1) Tx couples into SW - includes earth effects
2) Mutual inductance SW-earth
3) SW couples into Rx - includes earth effects

4. Data
- what are the data? what do you expect to see?

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

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

Successful modeling must happen before we can hope to remove the Powerline effects and get an unaltered geologic response.

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

Current methodology is to call contaminated data. Contamination builds false conductors in subsurface - interpretation must be worry of conductors in the subsurface

We are still in the "understanding the problem" phase.