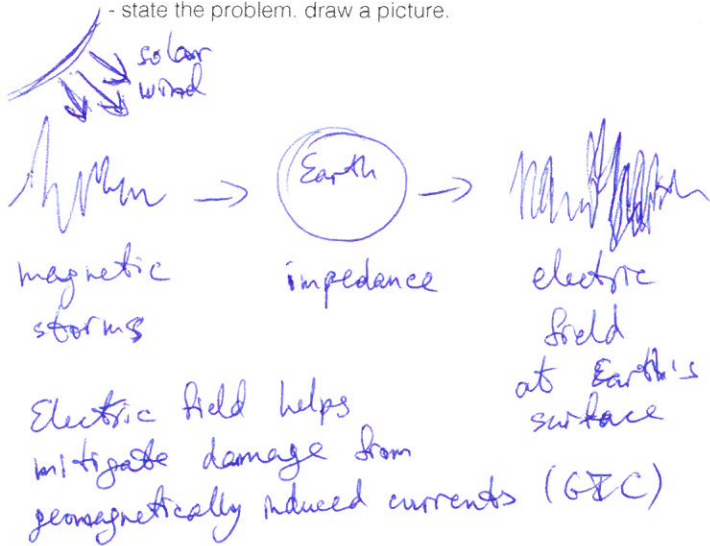


### 1. Setup

- state the problem. draw a picture.



### 2. Properties

- what are the diagnostic physical property contrasts?

Strong magnetic storms can knock out a power grid.  
We want to nowcast or predict the electric fields at ground level.

### 3. Survey

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

We want to work in time domain. For that, we convert an MT impedance to a discrete impulse response.

### 7. Synthesis

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

### 6. Interpretation

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

### 5. Processing

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

### 4. Data

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

MT data. As much of it as possible.

- 1) Collect MT data, eg. US Array
- 2) Invert for large-scale conductivity structure.
- 3) Estimate the gridded MT impedances
- 4) Convolve the MT impedances with interpolated magnetic fields to get the electric fields.
- 5) Use these to compute GICs: electric currents in power grids.