

# Servicios y Recursos Geofísicos

## GRS Chile



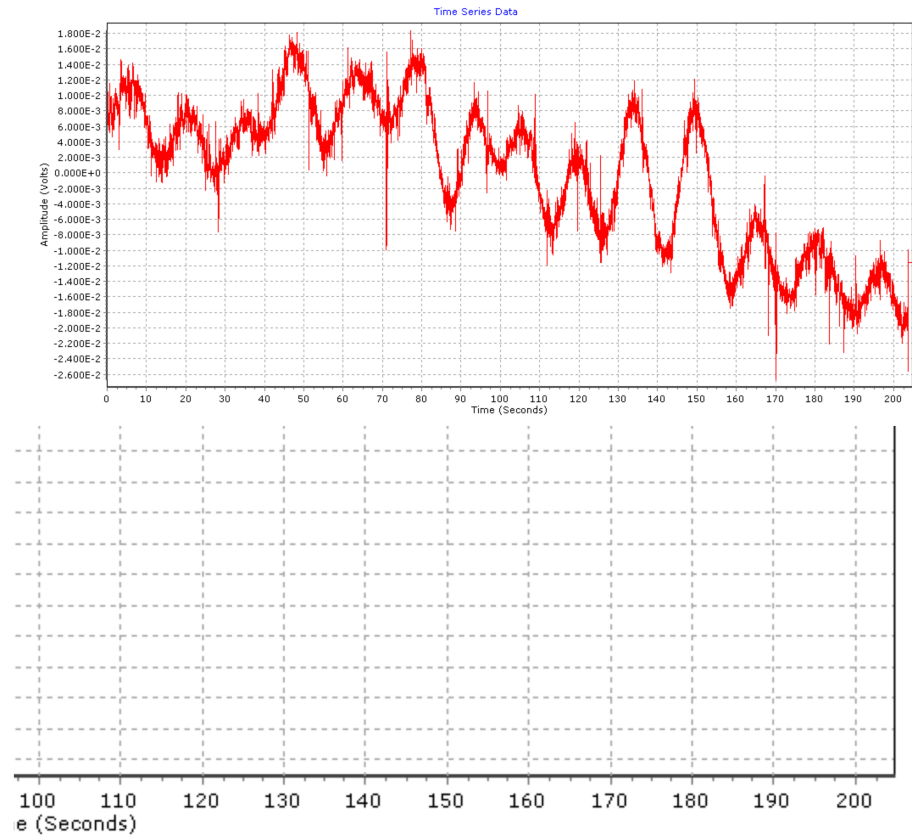
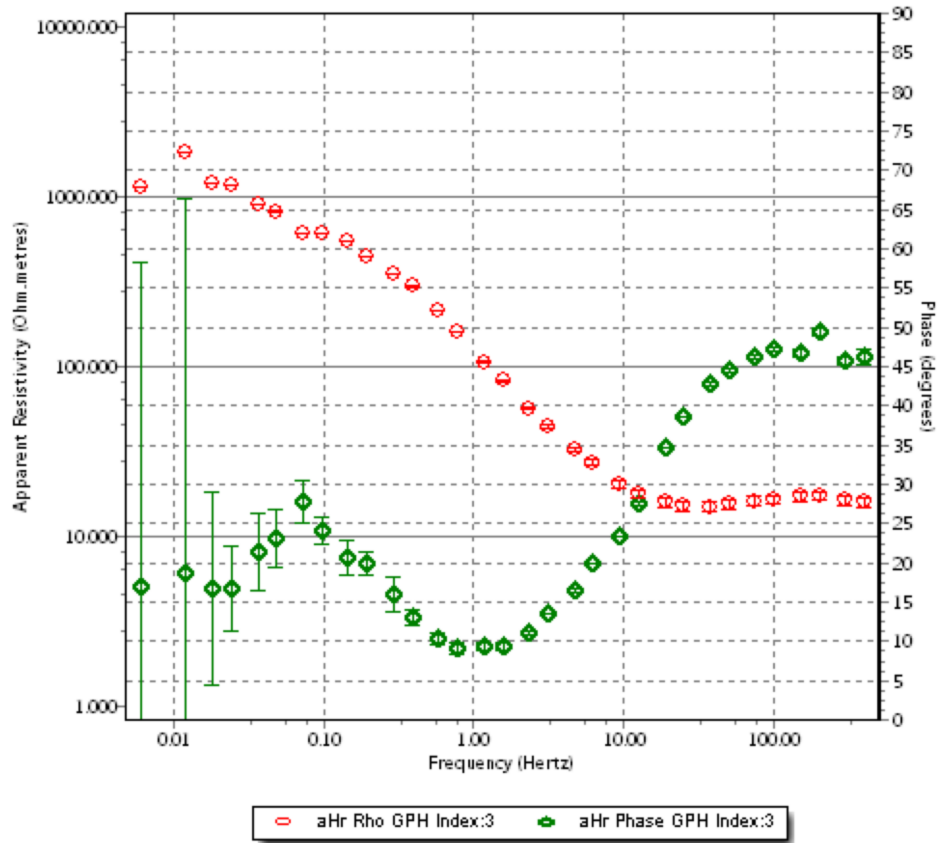
Héctor Verdejo P.  
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# Outline

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- GRS TC IP Data (...in 3 slides!)
- Applications to Mineral Exploration (a case history from Oz)
- Summary
- Some open questions...

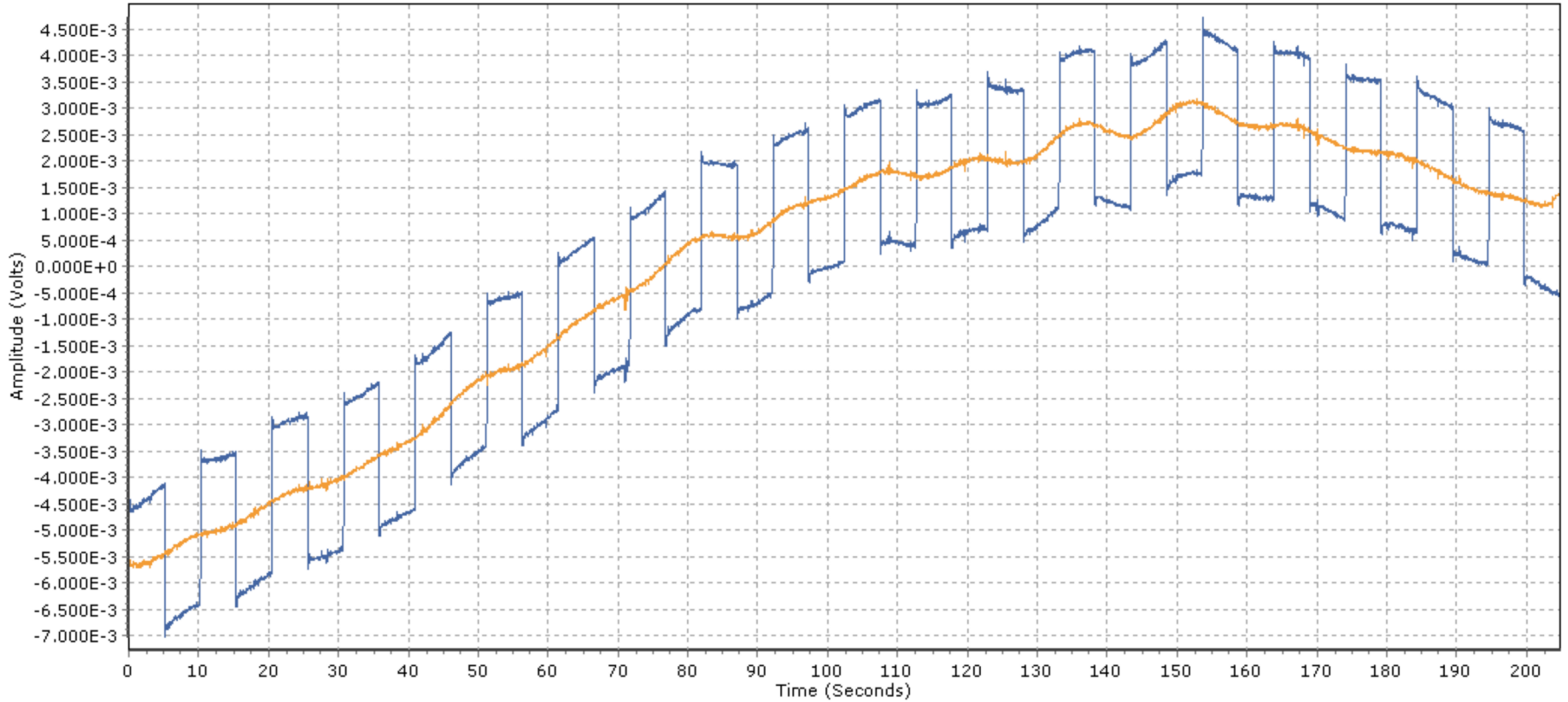


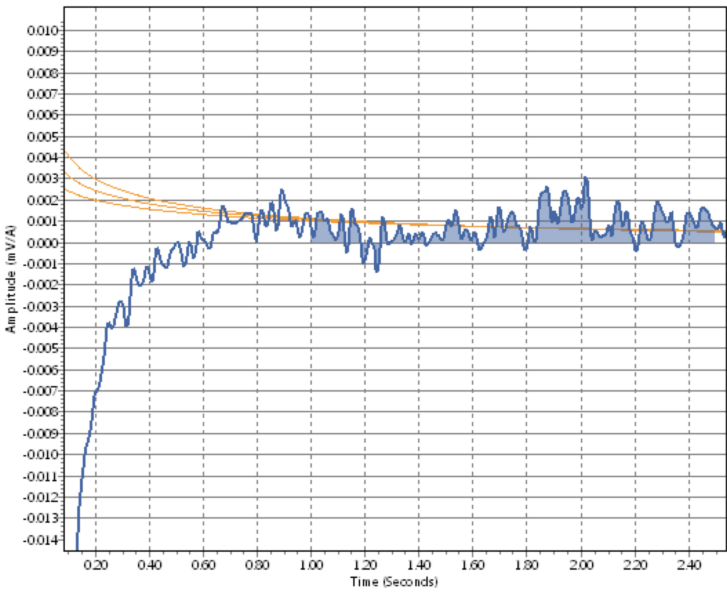


- Pole-dipole survey
- 200 m dipoles
- 3 km Tx-Rx distance
- $n = 15.5$
- Remote station 40 km



Time Series Data





IP Parameters

Vp: -0.38 (mV/Amp)

M: 3.17 (mV/V)

MErr: 130.96 (%)

↓: 1.4-5.7 (mrads)

Rho: 121.2 (Ohm.m)

Window (for IP Calculation)

Start - t0: 1.0000 (secs)

Finish - tE: 2.5000 (secs)

Refresh

Geometry (for Rho Calculation)

A-Spacing: 200 (m)

n-Spacing: 15.5 0

G factor: -321384.9 0

Calculate

Array

P-D  D-D  General

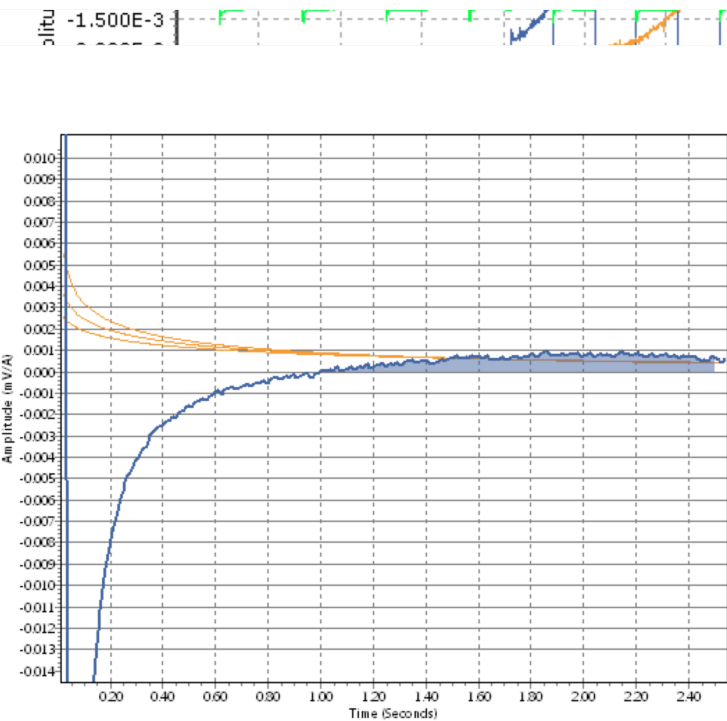
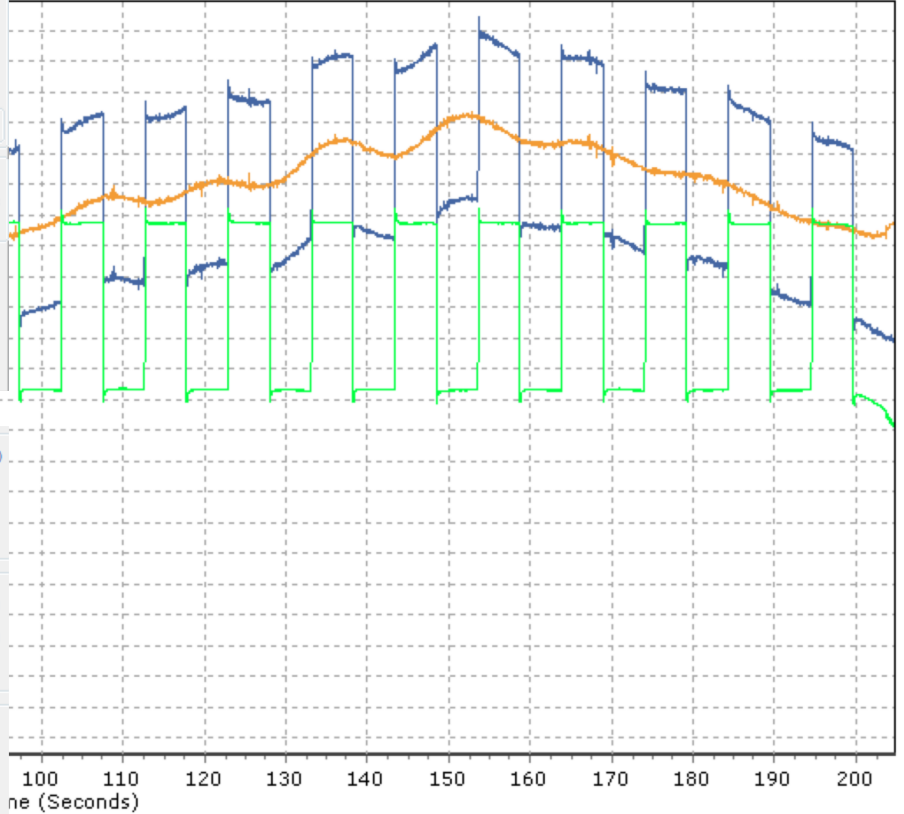
Hanning Window

1  15  127

3  31  Default

7  63

ys Data



IP Parameters

Vp: -0.38 (mV/Amp)

M: 2.51 (mV/V)

MErr: 15.64 (%)

↓: -0.5-3.6 (mrads)

Rho: 121.2 (Ohm.m)

Window (for IP Calculation)

Start - t0: 1.0000 (secs)

Finish - tE: 2.5000 (secs)

Refresh

Geometry (for Rho Calculation)

A-Spacing: 200 (m)

n-Spacing: 15.5 0

G factor: -321384.9 0

Calculate

Array

P-D  D-D  General

Hanning Window

1  15  127

3  31  Default

7  63



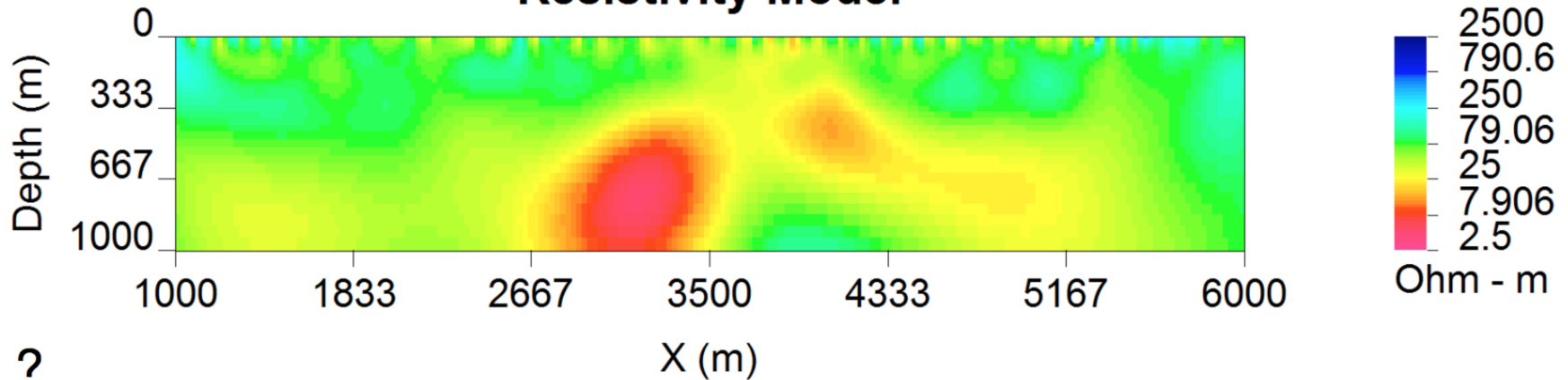
# Olympic Dam CSEM Inversion

Terry Ritchie & Peter Rowston

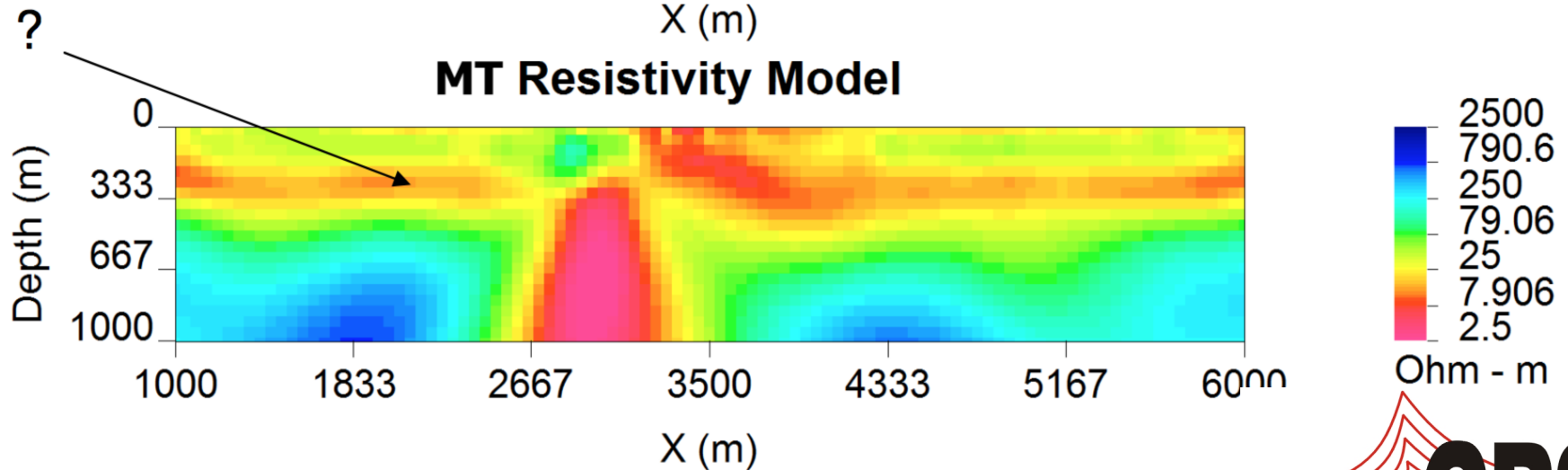


- The Horizontal Conductor's Location (MT) matches the Stratigraphic Location of the Tregolana Shale

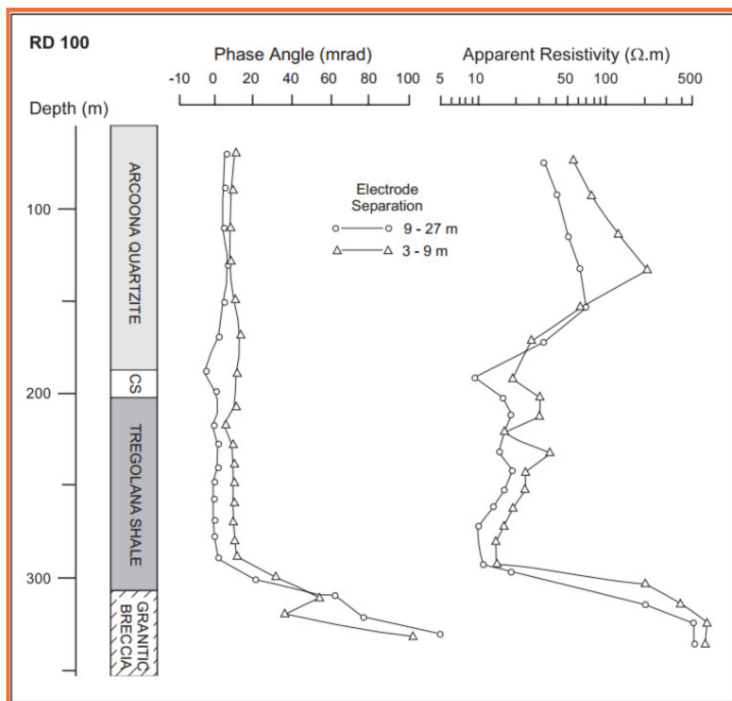
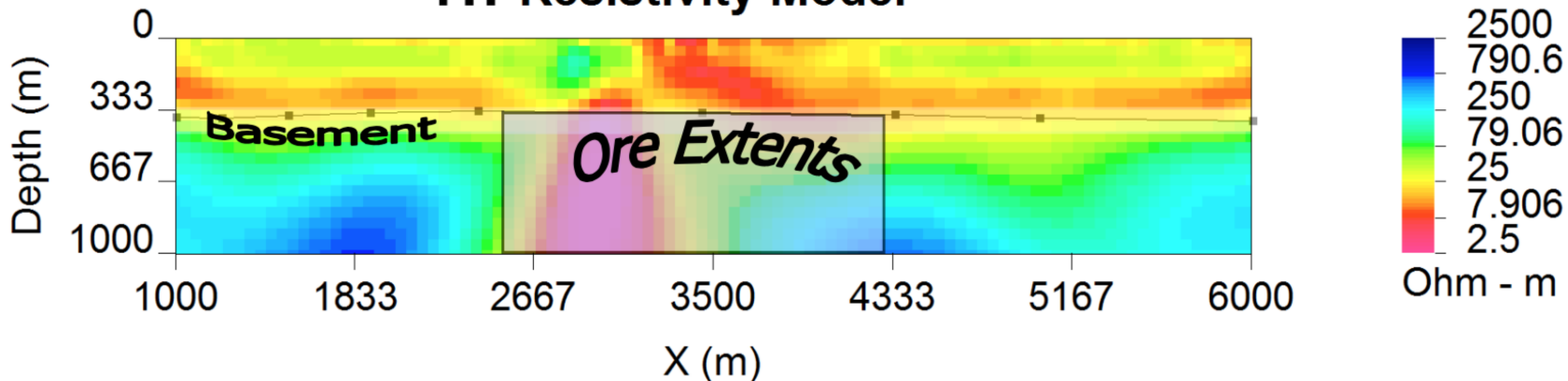
**Resistivity Model**



**MT Resistivity Model**



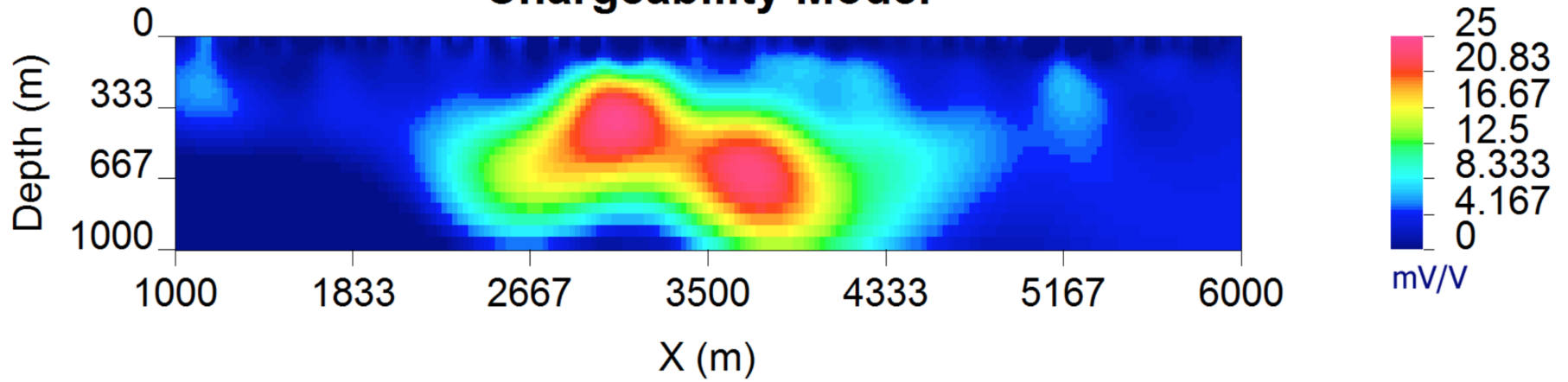
## MT Resistivity Model

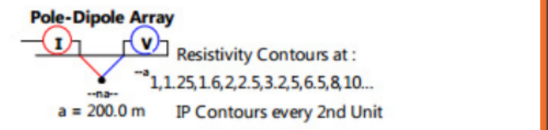
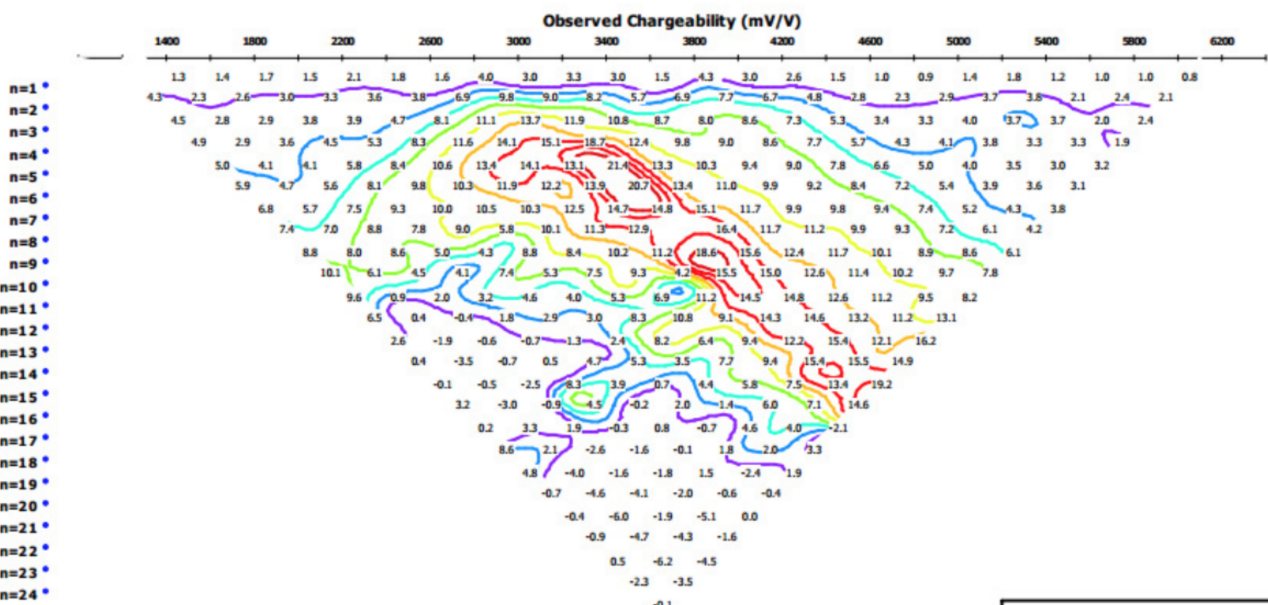
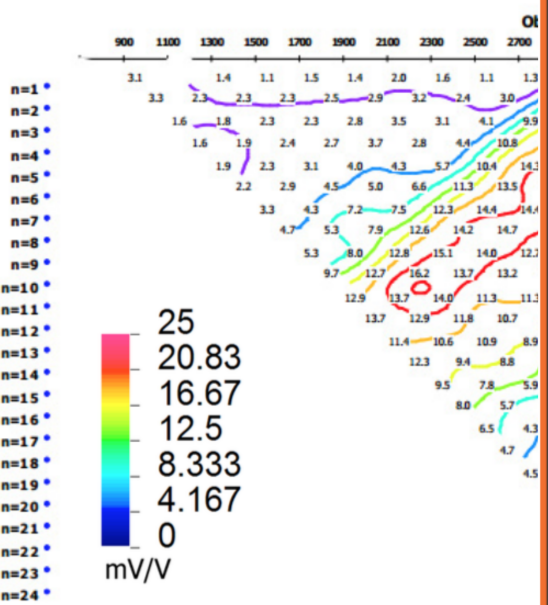
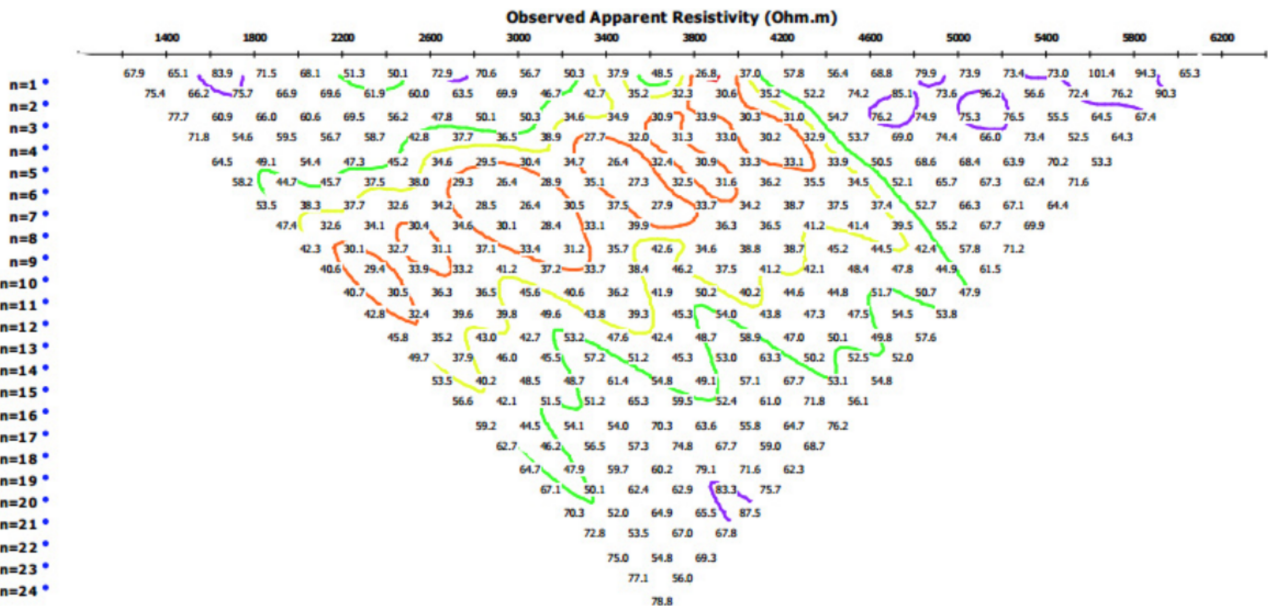
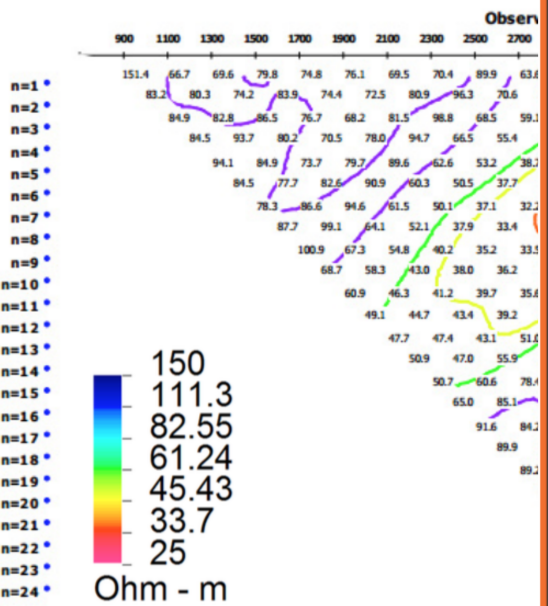


- 100m+ Shale atop Basement
- Shales have often been Observed to be Electrically Anisotropic, as are most Sediments

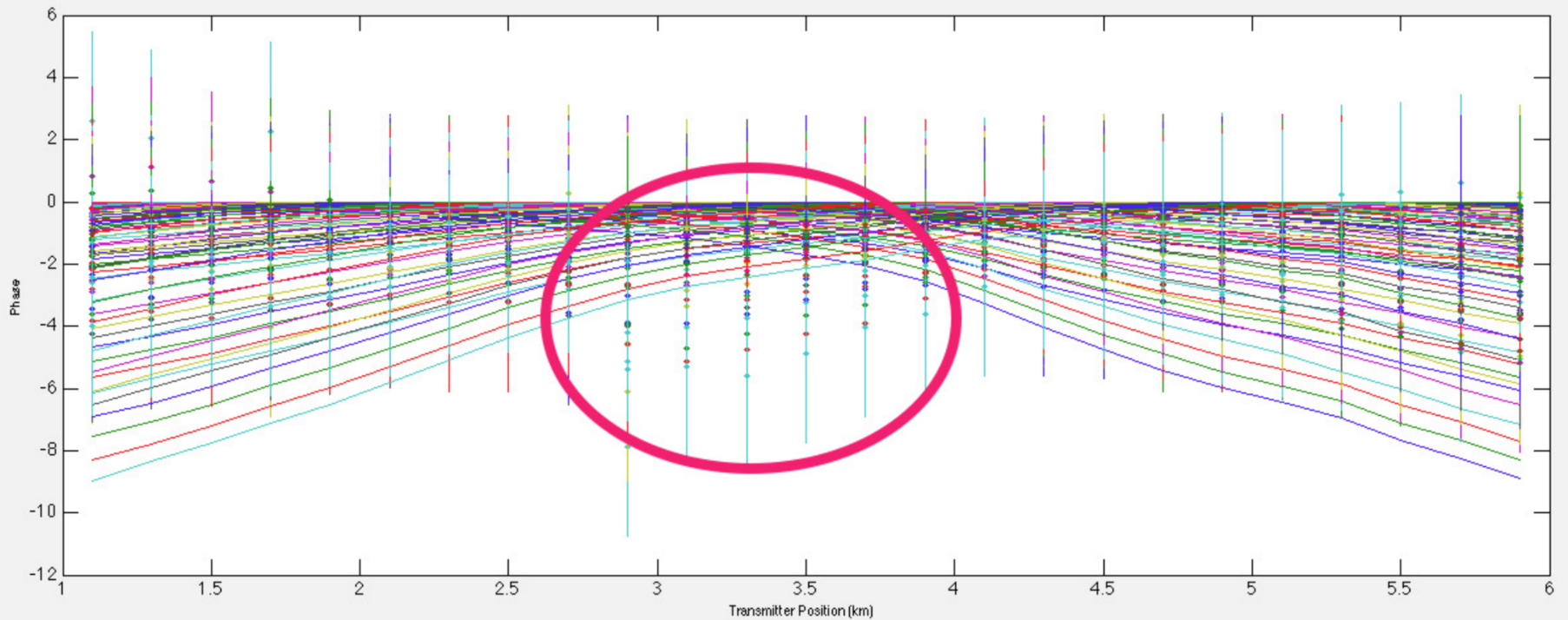


# Chargeability Model





- Data fits, phase can not be fit
- Can't solve for IP component or phase
- Biggest misfit's over the Orebody



# Summary

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- Reposing surveys as CSEM makes EM part of the solution and not part of the problem.
- Evidence observed in modeling shows that IP response is above EM up to 1 Hz so once you can calculate the EM this isn't always as bad as you think.
- This problem use to be a difficult IP problem. Now we are exploring even deeper, under thicker and more conductive cover and IP/EM distinction it is not so clear.





**THANKS!**