

**EXES-UB**



UNIVERSITAT DE BARCELONA



# **3D model from 1D determinant inversion**

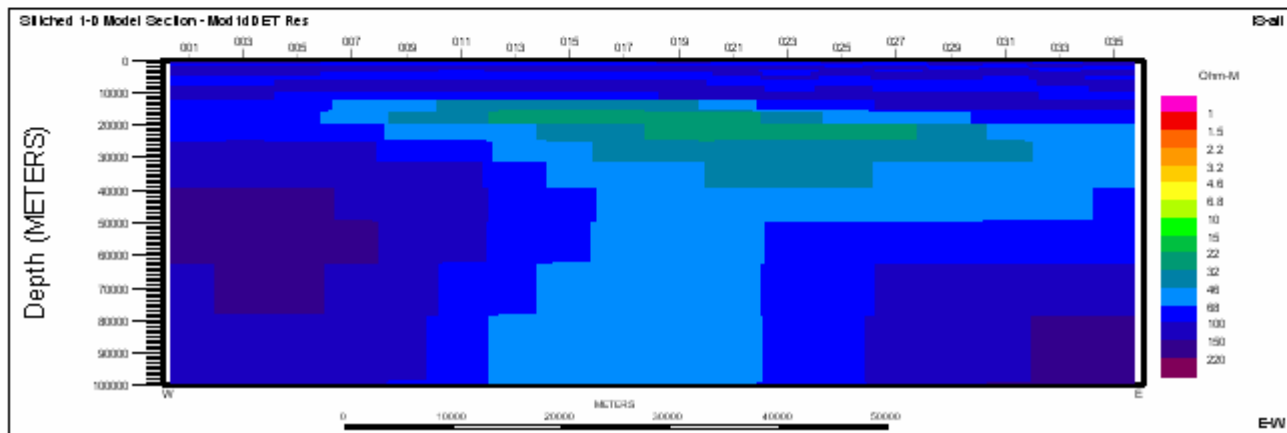
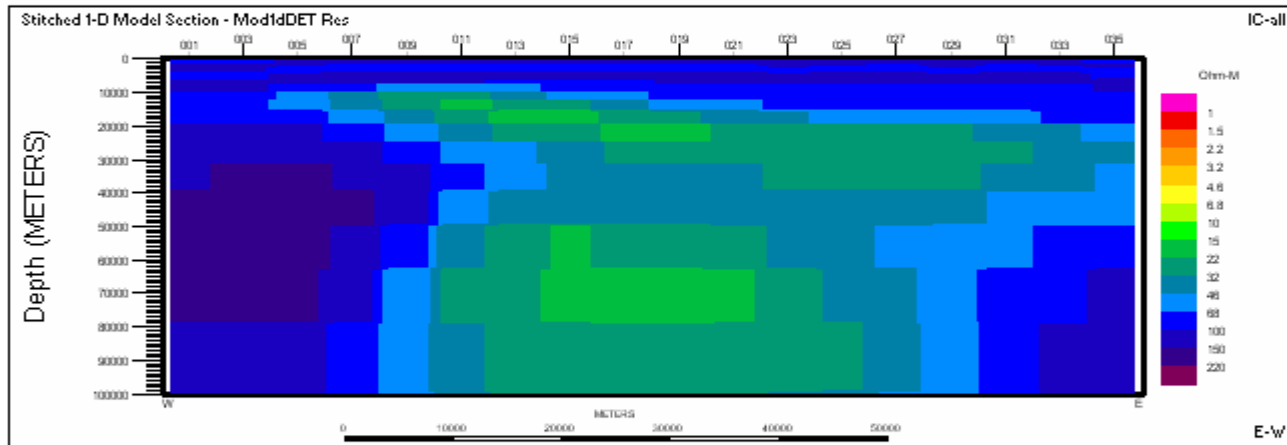
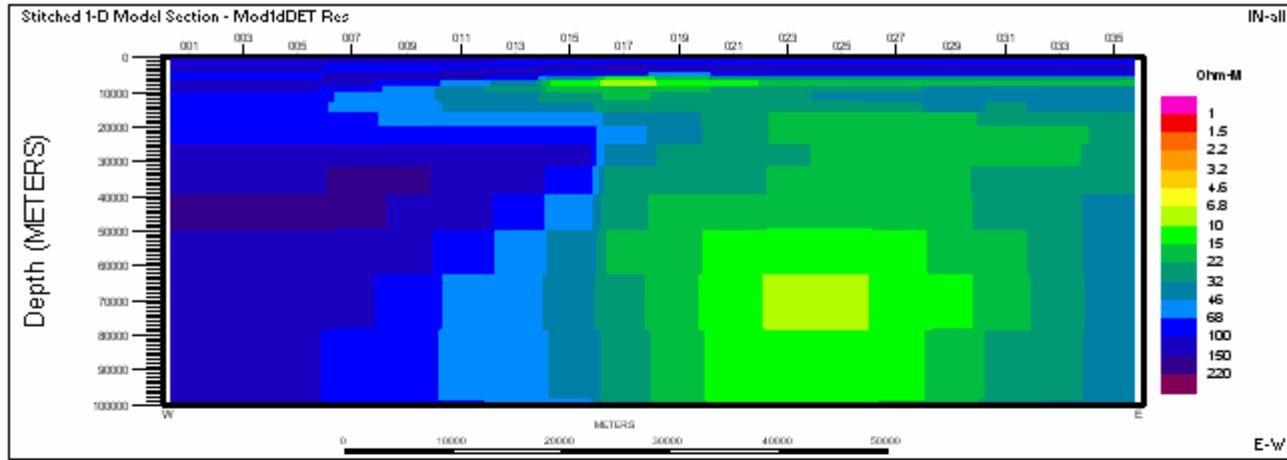
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**EX**ploració Electromagnètica i **S**ísmica.  
Universitat de **B**arcelona

**2nd Annual St. Patrick's Workshop, MT 3D inversion , 12th – 14th March 2008**

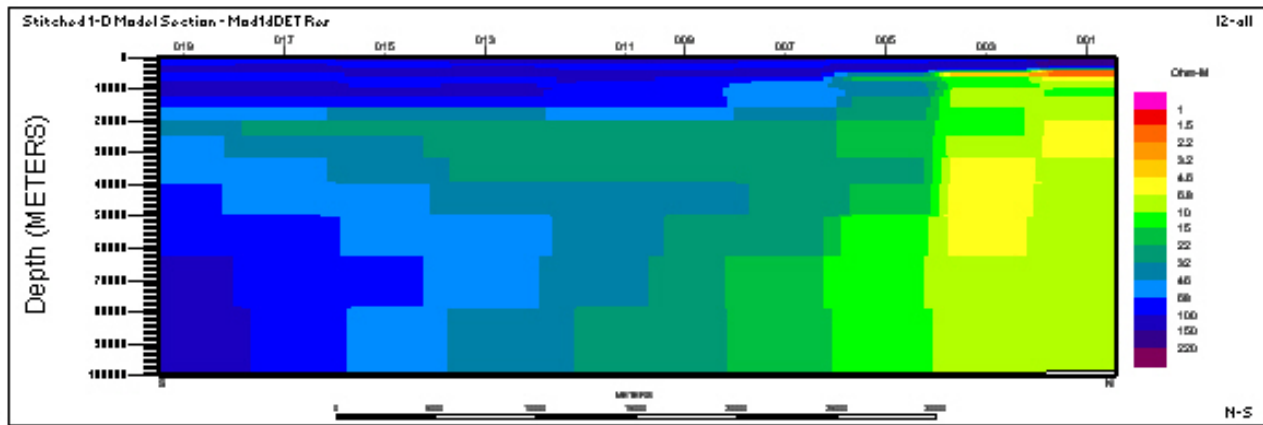
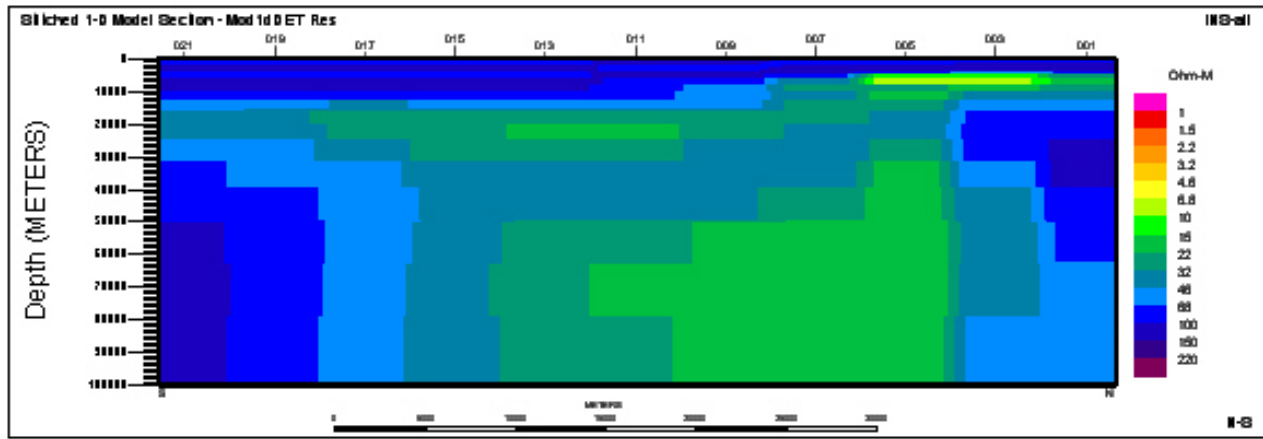
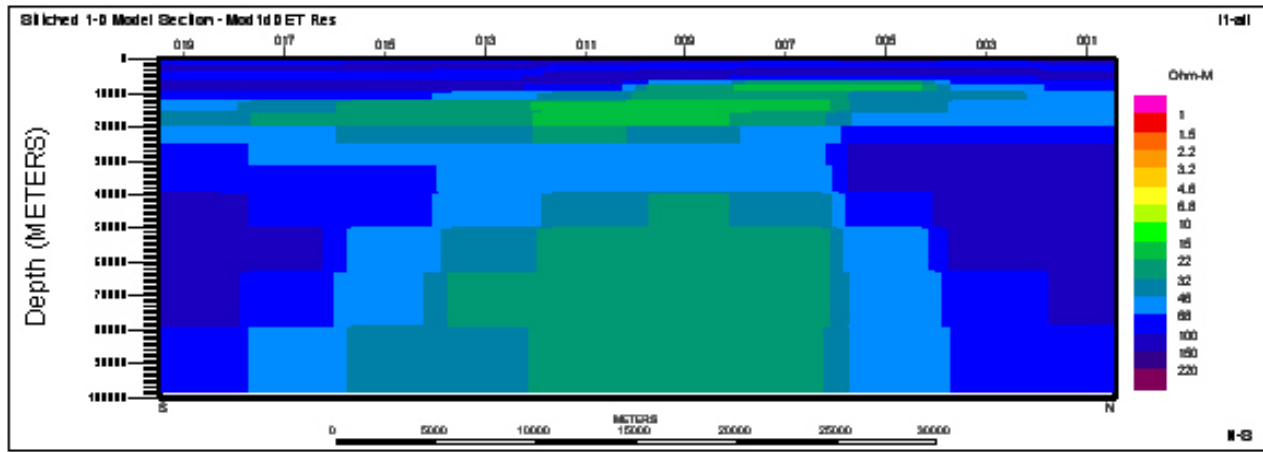
- Strategy:
  - Inverting the determinant responses of each site (Occam, 1D, Constable *et al.*, 1987)
    - 20 periods (0.18 s to 10000 s) Occam's inversion
    - 85 Sites: 6 profiles (3 NS, 3 EW)
  - Interpolate over a 3D mesh → 3D-detMODEL
  - Compute forward responses (Mackie, 1999).
- ... Forthcoming:

3D inversion using 3D-detMODEL as a initial model



W-E



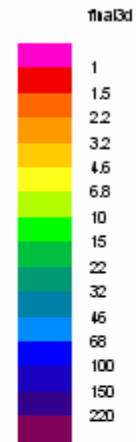
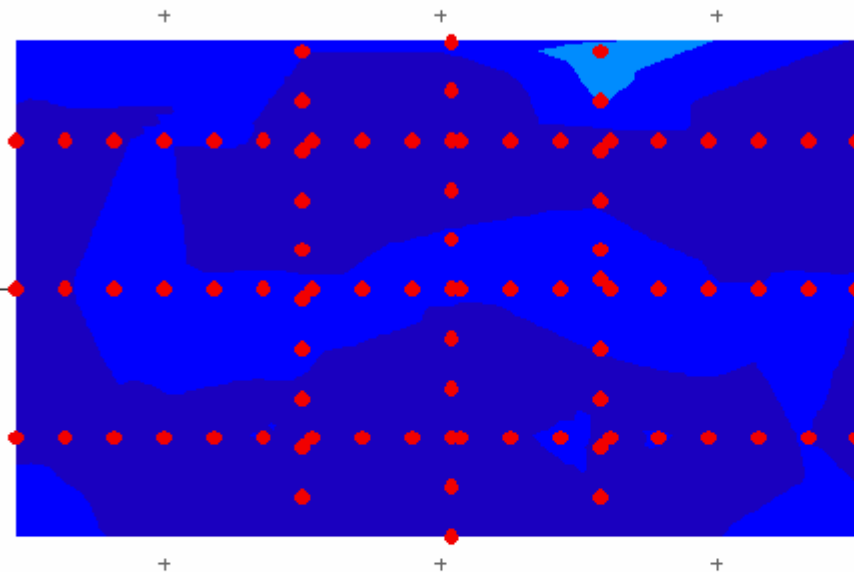


S-N

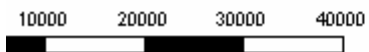


Z= 0 - 5 km

Projection: UTM 15  
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Northing: 0.0  
Easting: 500000  
Scale: N/A

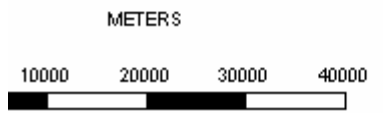
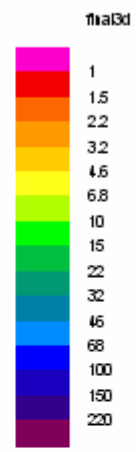
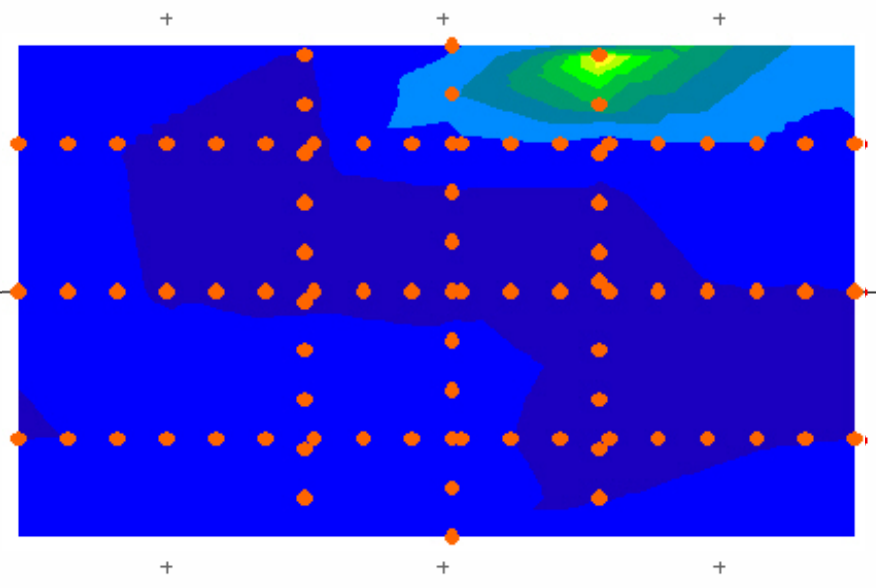


METERS



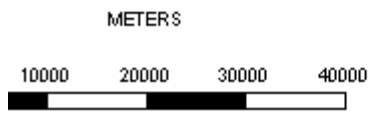
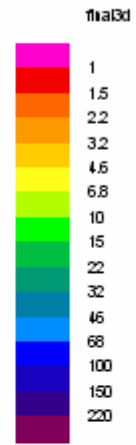
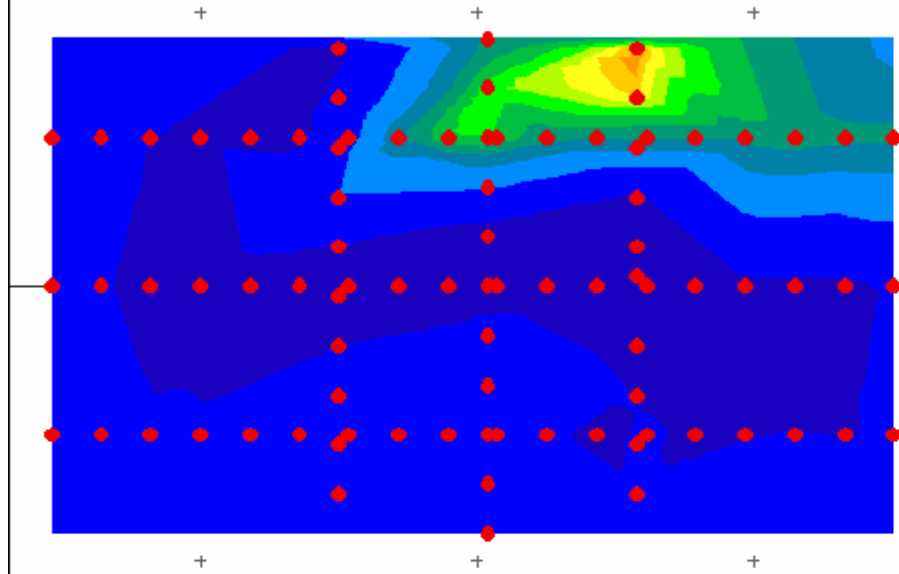
Z= 5- 6 km

Projection: UTM 15  
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Northing: 0.0  
Easting: 500000  
Scale: N/A



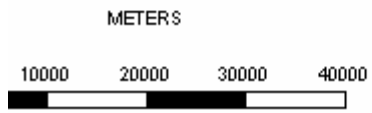
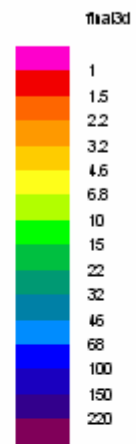
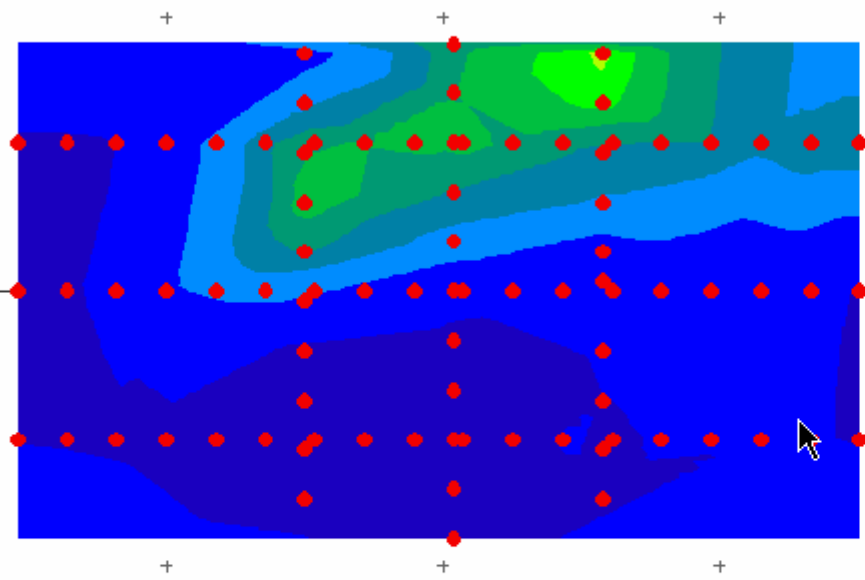
Z= 6 -7 km

Projection: UTM 15  
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Northing: 0.0  
Easting: 500000  
Scale: N/A



Z= 8 - 10 km

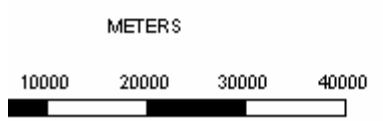
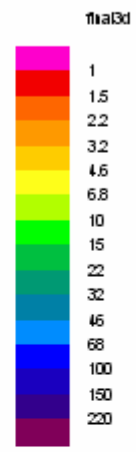
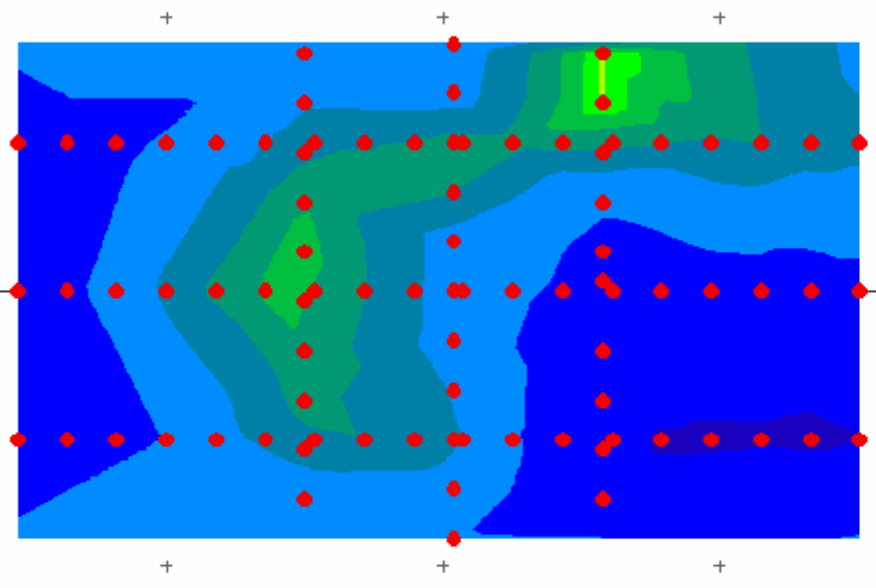
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Scale: N/A





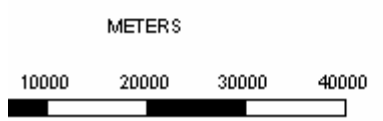
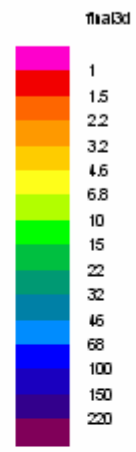
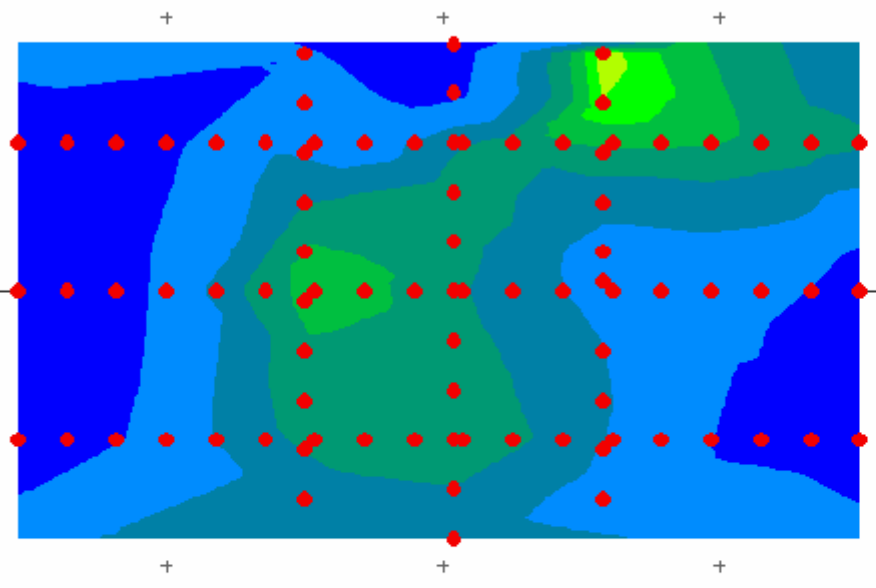
Z= 12-15 km

Projection: UTM 15  
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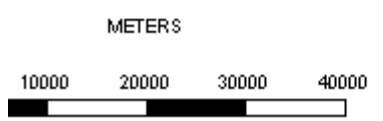
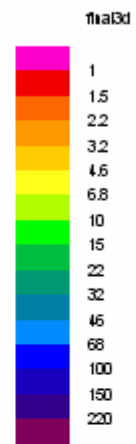
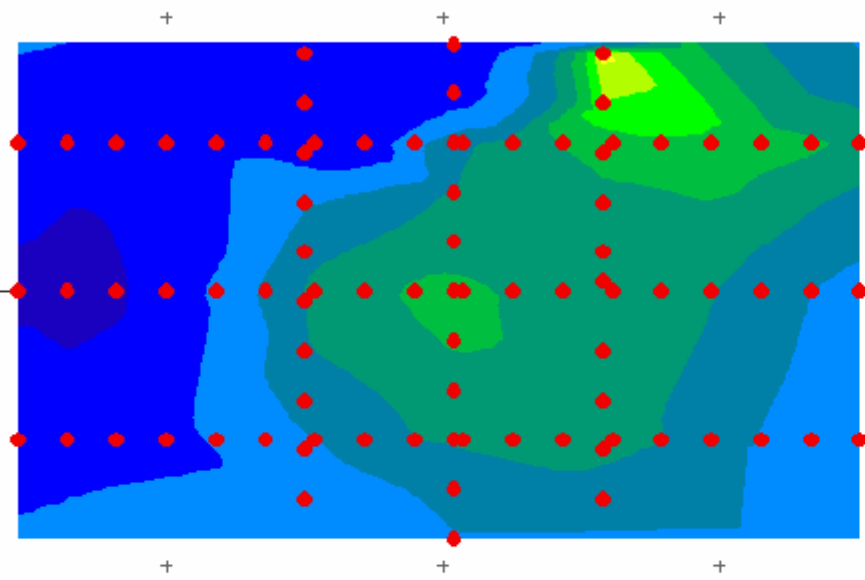
Z= 20-25 km

Projection: UTM 15  
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Northing: 0.0  
Easting: 500000  
Scale: N/A



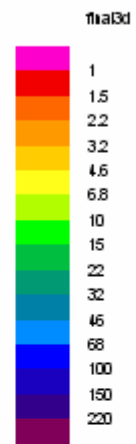
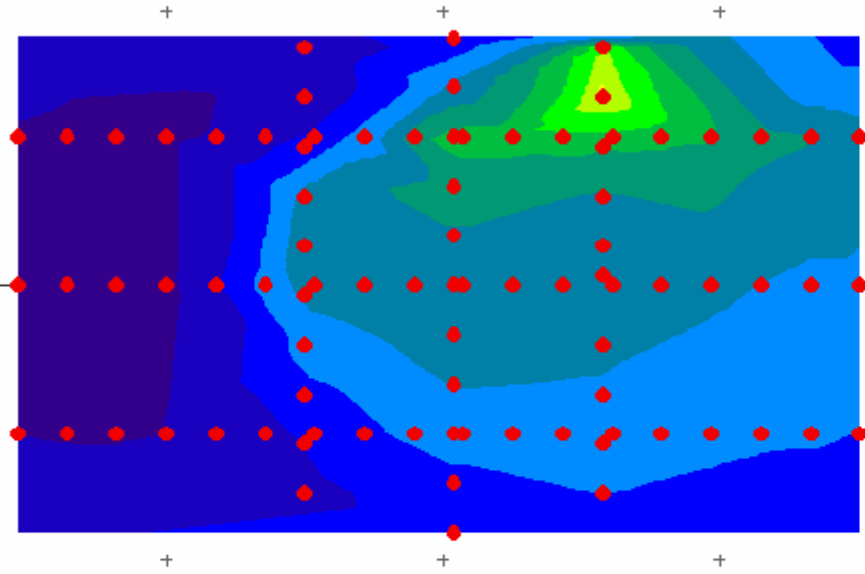
Z= 25-30 km

Projection: UTM 15  
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Northing: 0.0  
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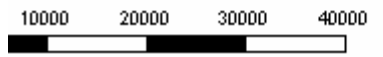


Z= 30-40 km

Projection: UTM 15  
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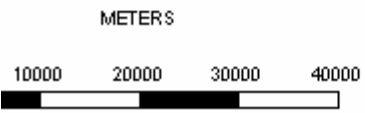
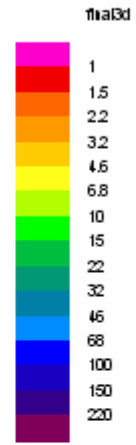
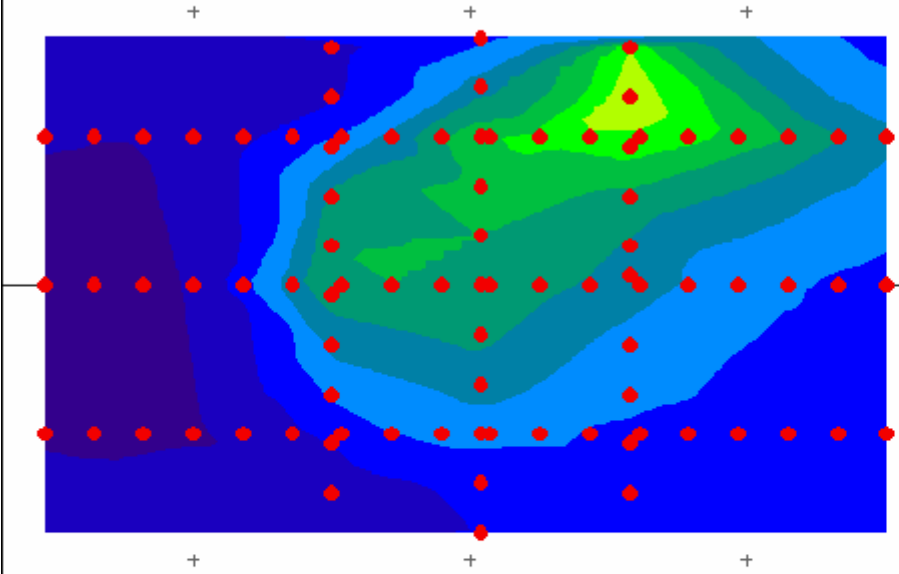


METERS



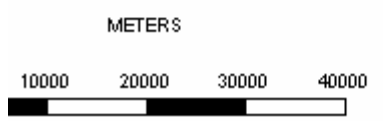
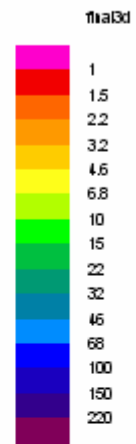
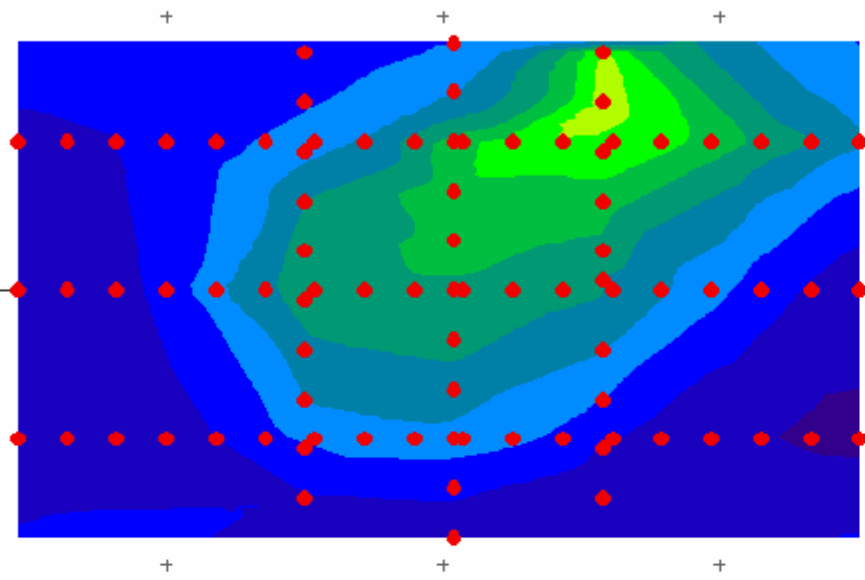
Z= 42 - 52 km

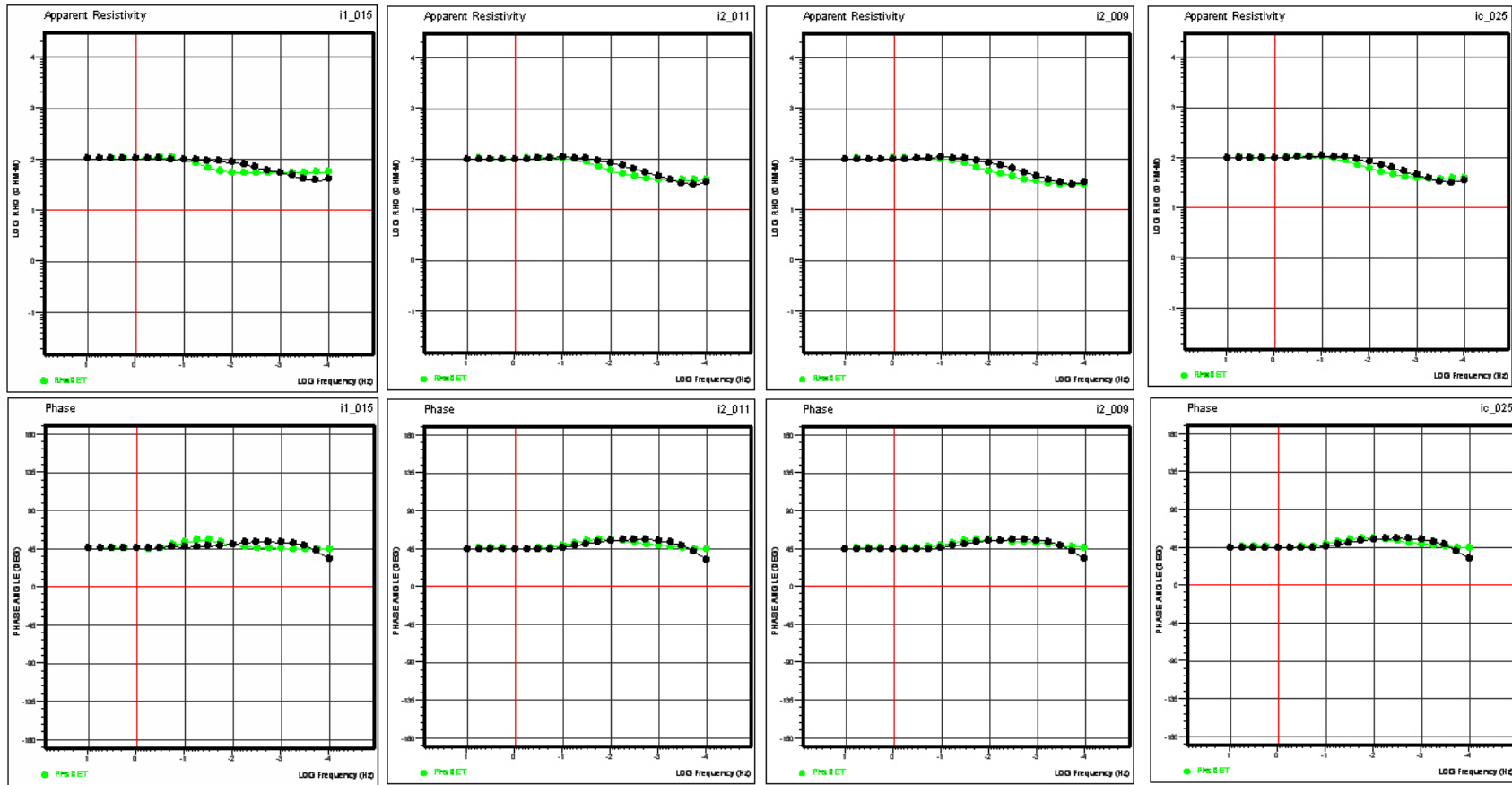
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Northing: 0.0  
Easting: 500000  
Scale: N/A



Z= 80-100 km

Projection: UTM 15  
C Merid: +0:00:00.00  
Northing: 0.0  
Easting: 500000  
Scale: N/A





a)

b)

a) Apparent resistivities

b) Phases

— Synthetic data (Test model)

— 3D-detModel responses