Geophysical Studies
Rift structure and basin control revealed by 3-D magnetotelluric

Sophie Hautot, IMAGIR, Brest, France

- Eastern Africa is characterised by complex geology (rifting, large volcanic provinces, sub-basalt basins,..).
- In this context, 3D magnetotelluric performs very well to provide an accurate geological background of possible prospects prior extensive exploration.
- We developed a 3-D imaging scheme which does not require heavy smoothing technique as other methods. Thus it is possible to image accurately resistivity contrasts such as boundary faults/sediments or basement/sediments.
- 3D properties of MT are used even when data are collected along profiles.

MT exploration
Example of the North Tanzanian Divergence

Example of the Omo Basin, SW Ethiopia
Priorities

• Collate and share existing academic, industry, and internal data bases, reports, and publications – some may be in climate change literature

• Inexpensive: Re-evaluate regional gravity and magnetic data. (Challenge is reduction to pole or equator for magnetic data near equator)

• Use new remote sensing tools

• Need rate information
InSAR provides simple kinematic information