

News

Best Poster

Kirsty Beckett – Inferring soil chemical and physical mobility using 256-channel NaI radiometric data



Kirsty Beckett receives her award for the Best Poster from Howard Golden.

Best Exhibitor

Ikon Science (Martin Bawden)

Laric Hawkins Award

For the most innovative use of geophysics in a paper presented at the Conference

Andrew Duncan – Total Field EM for highly conductive targets

Honourable mentions

Brett Harris – High resolution seismic reflection and radar for hydrology

Jason Sun – Imaging of fractures and faults inside granite



Martin Bawden receives the Best Exhibitor Award on behalf of Inco Science.

EM workshops in Europe

Threads of the present widespread activity in electromagnetic (EM) geophysics, both Australian and international, link a variety of meetings held recently. These meetings have covered a range of styles: large and small, formal and informal, specialist and general.

Thus EM was strong at the Exploration 2007 Conference held in Toronto, Canada, 9–12 September 2007. This meeting was the fifth in a series held every 10 years, starting (in 1967) with a meeting which marked the centenary of Canadian Federation. EM was also strong at the SEG meeting held in San Antonio, Texas, 23–28 September 2007.

In a different tradition, the International Union of Geodesy and Geophysics (IUGG) held its assembly in Italy this year, and the next will be in Melbourne in 2011. Its member association International Association of Geomagnetism and Aeronomy (IAGA) will meet next in Sopron Hungary, in 2009. Both IUGG and IAGA traditionally hold sessions on EM induction in the Earth, and the IAGA Working Group which specifically focuses on this topic held its biennial workshop last year in El Vendrell, Spain (see http://www.agu.org/eos_elec/) and will meet in 2008 in Beijing.

Amongst this tapestry of activity, I recently attended and here report on two workshops held in Europe, which were intentionally juxtaposed in space and time. The

Fourth International Symposium on Three-Dimensional Electromagnetics (3DEM4) was held in Freiberg, Germany on 27–30 September 2007, and the 22nd Colloquium on Electromagnetic Depth Research (EMTF 2007) was held across the border at Decin-Maxicky in the Czech Republic from 1 to 5 October 2007. At the time of writing, there is more information on these two meetings at the websites <http://www.geophysik.tu-freiberg/3dem4> and http://rebel.ig.cas.cz/activities/emtf/emtf_2007_ramec.htm

3DEM4 with the theme 'New Horizons' was hosted by Klaus Spitzer and Ralph-Uwe Borner and colleagues of the Institute of Geophysics of the Technical University of Freiberg. The meeting followed 3DEM3, which was held in Adelaide in 2003 juxtaposed with the ASEG conference and exhibition of that year. 3DEM2 and 3DEM1 were held respectively in 1999 (Utah) and 1995 (Connecticut), and Australian geophysicists have made many contributions to the series. At Freiberg there were good presentations on orebody-style EM, that is, controlled-source methods over orebody models. The matter of airborne time-domain EM over one-dimensional situations (such as in use to study the salinity problem in Australia) was not canvassed as extensively as it might have been, perhaps because of competition for participant time amongst the various September meetings. However, another growth method in EM, controlled-source seafloor EM as applied to

the investigation of sedimentary basins and especially gas hydrate deposits, was well aired. So also was natural-source field magnetotellurics, with impressive case histories from different tectonic settings around the globe. Attention was given to what is actually the best form of the observed data to invert. Into this question also came contributions from the New Zealand group which has developed 'phase tensor' analysis.

The 22nd Colloquium on Electromagnetic Depth Research was hosted in the Czech Republic by Joseph Pek and colleagues of the Geophysical Institute, Czech Academy of Sciences. Previously the meetings of this series have been in Germany. Their initiation in 1963 is attributed to Julius Bartels, when the extra geomagnetic observatories of the 1957–58 International Geophysical Year revealed new information about Earth electrical conductivity structure. Research in the topic was led in Australia at the time by W. Dudley Parkinson of the then Bureau of Mineral Resources. With all international participants very welcome, the 22nd Colloquium again received its traditional support from German scientists, and exhibited the widespread and comprehensive activity around the world of German researchers in electromagnetic methods. The geophysical work of the Czech Academy of Sciences was well displayed, and the meeting particularly remembered the contributions to EM made by the Czech scientist Oldrich Praus (deceased 2006).

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Enigmatic changes to education, science and research in new Rudd government

Although the new Rudd government generated a breath of fresh air in Canberra, the administrative arrangements of his government in the Education, Sciences and Research sectors appear at first glance to be overly complex. According to my assessment there are at least six departments with significant responsibilities in these three key sectors.

First up, we have the *Department of Education, Employment and Workplace Relations*, with Julia Gillard, the Deputy Prime Minister, at the helm. Some of the matters she will deal with include:

- Education policy and programs including schools, vocational and higher education
- Education and training transitions policy and programs
- Science awareness programs in schools

As Matthew Purss writes in this *Preview* (page 5), teaching science at schools and universities is crucial to the future of our industry.

Then we have the *Department of Resources, Energy and Tourism*, which is headed up by Martin Ferguson. This has responsibility for:

- Energy policy
- Mineral and energy industries, including oil and gas, and electricity
- Energy-specific international organisations and activities
- Minerals and energy resources research, science and technology
- Geoscience research and information services including geodesy, mapping, remote sensing and land information co-ordination
- Renewable energy technology development
- Clean fossil fuel energy
- Industrial energy efficiency.

This department is very important for the ASEG's industry links.

Then we have the *Department of Innovation, Industry, Science and*

Research, with Kim Carr as the responsible minister. His department is responsible for issues such as:

- Industry innovation policy and technology diffusion
- Promotion of industrial research and development, and commercialisation
- Export services and marketing, including export promotion, of manufactures and services
- Investment promotion and small business policy and implementation
- Facilitation of the development of service industries generally
- Weights and measures standards and analytical laboratory services
- Science policy
- Promotion of collaborative research in science and technology and co-ordination of research policy
- Commercialisation and utilisation of public sector research relating to portfolio programs and agencies
- Research grants and fellowships
- Information and communications technology industry development

CSIRO, AIMS and ANSTO also come under Kim Carr's portfolio. So Kim Carr looks after most of the research activities, which appear to be separate from the teaching aspects of the education system. How this is going to work out is not immediately clear.

Fourthly, we have the department of the *Environment, Water, Heritage and the Arts*. This deals with:

- Environment protection and conservation of biodiversity
- Meteorology, Air quality and Land contamination
- The Australian Antarctic Territories
- Environmental research
- Water policy and resources
- Ionospheric prediction and community and household renewable energy programs.

This department is led by Peter Garrett.

Then there is the *Department of Climate Change*, which is headed by Penny Wong. This is responsible for:

- Domestic and international climate change policy
- Design and implementation of emissions trading
- International climate change negotiations
- Renewable energy policy, regulation and co-ordination
- Greenhouse emissions and energy consumption reporting
- Greenhouse mitigation and adaptation
- Co-ordination of climate change science activities
- Energy efficiency policy and standards

And finally the *Department of Broadband, Communications and the Digital Economy*, which has Stephen Conroy as Minister. This portfolio deals with:

- Broadband policy and programs
- National policy issues relating to the digital economy
- Content policy relating to the information economy

So there appears to be several overlapping issues. For example, Gillard and Carr in the education sector; Wong, Carr, Garrett and Ferguson on energy and Conroy, Carr and Ferguson on innovation. We will have to see how they all interact. At first glance it might appear that Peter Garrett has missed out because he does not control climate change issues. However, he has responsibility for water policy and resources and that just by itself is crucial for our future. So it may be a carefully planned balancing act, with the overall control vested in Prime Minister and Cabinet, as it was under John Howard. We will have to wait and see.

For those who would like to follow these issues up on more detail they should go to: <http://www.pmc.gov.au/parliamentary/index.cfm>. This is a very interesting site which outlines very clearly the portfolio responsibilities in the Rudd government and is a must for any political observer.

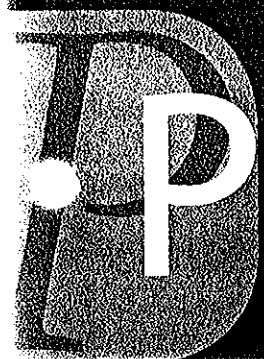
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The 3DEM series was started in memory of Gerald W. Hohmann by a group of his friends and colleagues. At the conference dinner in the Freiberg 'Ratskeller' at the meeting this year, Hohmann Awards for career achievement in the topic of 'Electrical methods applied to geothermal

exploration and development' were presented to Adele Manzella of the Institute of Geosciences and Earth Resources of the National Research Council of Italy, and to Toshihiro Uchida of the National Institute of Advanced Industrial Science and Technology of Japan.

The next 3DEM meeting is planned for Japan in 2011.

*Ted Lilley
Visiting Fellow, Research School
of Earth Sciences
ANU, Canberra*



PREVIEW

AUSTRALIAN SOCIETY OF EXPLORATION GEOPHYSICISTS



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