

THE PETROS EIKON NEWS

News from PetRos EiKon Incorporated

MITEC PROJECT 93E21:

In October, 1993 a proposal was made to MITEC to fund a three year project for the development of software to rapidly model, invert and image airborne electromagnetic data (EMIGMA). This project was subsequently broadened to include ground a borehole EM systems in addition to the initially proposed airborne systems. The thrust of the project is to provide accurate three dimensional modelling software that the practising geophysicist can use in the field to interpret his or her data.

Our MITEC project (93E21) has now attracted 10 sponsors, who in alphabetical order are Aur Resources, BHP, Cominco, CRA, Falconbridge, INCO, Kennecott, Noranda, Outokumpu and Placer Dome. The project also has the backing of the Government of Ontario, through the Canada-Ontario Northern Development Agreement. Sponsorship of the project in its initial year costs \$10,000.00 per member, and grants the sponsor large discounts on software developed under the project (In return for support, sponsors receive a 50% reduction on the first license and reductions of over 96% on subsequent PC licenses). The deadline for membership at this reduced rate is Sept 30, 1994.

Project members who wish to have a preliminary WINDOWS version of the modelling software prior to the initial delivery date of Oct. 1, 1994 may have one by contacting PetRos EiKon.

Further information on the project is available from PetRos EiKon, including a technical summary of the software a description of the proposed three year software development. MITEC project information is available from Richard Moore at MITEC, who can be reached by telephone at 416-956-5728 or by fax at 416-956-5729 in Toronto.

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EUROPEAN INSTALLATION:

In addition to the formal members of MITEC project 93E21, the Geological Survey of Austria is also supporting our software development. In a recent trip to Europe connected with the European Association of Exploration Geophysicists in Vienna, a fully licensed version of our EMIGMA software was installed there.

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GEOLOGICAL SURVEY OF CANADA - IPP:

The IPP, or Industrial Partners Programme, is a program through which the GSC and industry cooperate in the development of new technology. PetRos EiKon is currently finalising negotiations with the government of Canada on a project to improve and evaluate electromagnetic interpretation tools. As a part of this programme, the Geological Survey will be contributing to the salary of Shengkai Zhao, a recent PhD graduate from the University of British Columbia, who will be starting at PetRos EiKon in early July. David Boerner, of the GSC will be working with on the project together with PetRos EiKon.

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RESEARCH COLLABORATION:

On our European trip, limited demonstration versions of the software were installed at the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR) in Hannover, Germany and at the University of Köln. We look forward to Joint work with the BGR on the interpretation of ground water in Namibia with helicopter geophysics, and to comparing results from EMIGMA with Köln's copy of Drushkin and Knizhermann's SLDM algorithm. Our initial tests in this regard shall deal with time and frequency domain calculations of simple layered models. Our time domain comparisons with the University of Köln should mesh nicely with research efforts on effective transformation of frequency domain models to the time domain currently being done with Richard Smith of Geoterrex in Ottawa.

Arrangements are being made for joint testing of modelling algorithms with other electromagnetic research consortia around the world, and we are eager to receive further suggestions in this regard.

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INTERPRETATION:

We are keen to test our software on real field data, so if you have any dipole-dipole data you can spare and share in a newsletter format (and perhaps eventually in a publication), please contact us. We are also interested to see how our software performs under *real field conditions* and over the next year we would like to field test it. After all, one of the goals of our project is to produce interpretation software that can effectively be used by the practising geophysicist in the field! If you have a project you feel could be of use in helping us field test our software, please contact us.

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July 1994: *The PetRos EiKon News: Activity & Research Notes from PetRos EiKon*

MAGNETOTELLURIC EMIGMA:

Support is gathering for developing a version of EMIGMA for MT, with a November 1 delivery planned. We would like to gather 6 sponsors for the project to fund development for a total of US\$21,000, and so far have confirmations from Andrea Zerilli at Agip, Karsten Bahr at the Potsdam Institute, with support possible from Alan Jones at the GSC. The project is planned to be carried out under contract to PetRoS EiKon, and it should be noted that the current scattering model employed in our EMIGMA software is particularly suitable for magnetotelluric applications.

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CONTACTING US:

PetRos EiKon moved to new 1500 Sq Ft offices on July 1. Our new address is:

PetRos Eikon Incorporated,
6515 A Mississauga Rd.
Mississauga, Ontario
Canada L5N 1A6

Telephone: 1-905-567-8277
Fax: 1-905-567-6745

E-MAIL: ross.groom@canrem.com

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THE PETROS EIKON NEWS is research bulletin directed to users of PetRos EiKon software and services. If you are neither, but would like to receive the **NEWS** anyway, all you have to do is to let us know.

TOPICS NEXT MONTH: EM forward modelling; Progress in time domain transformations