# On imaging technology in Japan and taxi drivers in The Netherlands

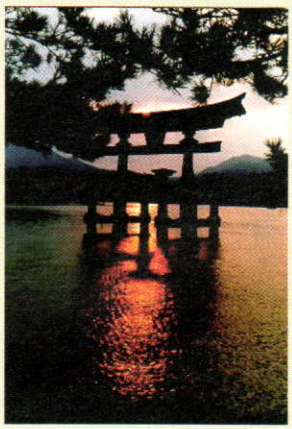
Kees Wapenaar tried to take a taxi home to file this report on the recent SEG/EAGE symposium in Japan where he represented the EAGE president.

Taxi!... 'Sorry sir, I can't drive you, I haven't signed on yet'. To my astonishment, the taxi driver departed two minutes later leaving me stranded with a heavy suitcase on a rainy and windy station platform.

This happened to me in my home town in The Netherlands, on my return from a long trip back from Tokyo, where I attended the 5th International Symposium of the SEG of Japan (SEGJ). The contrast couldn't be greater! Tokyo hosts a population almost twice that of The Netherlands in an area comparable with a Dutch province. Every day it absorbs millions of commuters from the suburbs who work, wine and dine in this lively city.

For a first time visitor, like me, it was great to see how well the infrastructure of Tokyo is organized and how the Japanese people live and work together in this limited space. Having experienced Japanese hospitality and organization for a couple of days – I visited the Geological Survey of Japan prior to the conference – it was no surprise to find that the SEGJ was perfectly organized as well. My compliments to the local organizing committee, headed by Dr Yutaka Murakami, whose efforts made this meeting such a great success.

Although I could say a lot about the excellent sushi and sashimi at the hospitality parties, I will concentrate on the programme. The common theme was 'Subsurface Imaging Technology and Underground Heterogeneity'.



The first technical session was a plenary session, consisting of a number of invited papers. It was opened by Leon Thomsen, who gave an overview of seismic anisotropy and looked ahead to its effect on exploration in the 21st Century. Thomsen foresees that 'conventional' acquisition technology will be replaced by new schemes that acknowledge the presence of anisotropy, that P-wave depth migration will include more and more of the effects of polar as well as azimuthal anisotropy, that converted wave acquisition will replace shear wave surveys, that local anisotropy will play a role in seismic characterization and, last but not least, that time-variant azimuthal anisotropy will become rou-

## Dates for Hilterman course on interpreting seismic amplitude

Dr Fred J. Hilterman will be presenting the already announced EAGE/SEG Distinguished Instructor Course 2001 on Seismic Amplitude Interpretation at seven venues outside America. He will be presenting at the EAGE Amsterdam 2001 on 11 June and then will be at Imperial College, London (19 Sept), Statoil, Stavanger (21 Sept), ASPG, Baku (25 Sept), SAGA, Drakensburg, South Africa (10 Oct), Dhahran Geoscience Society, Dhahran (15 Oct), IFP School, Paris (17 Oct), and Agip, Milan (19 Oct).

For the DISC course members of the EAGE and SEG pay a registration fee of 25 Euro, with lunch and an excellent reference book included. Non-member can attend but must join the EAGE when registering for the course.

## Big conference programme for Amsterdam 2001

The Technical Programme for EAGE Amsterdam 2001 will live up to expectations if the number of abstracts submitted is any guide! Some 655 submissions in total were received for the Technical Programme of which 252 have been accepted as oral presentations and 239 as poster presentations. In addition, for the first time there will also be six interactive sessions.

tinely measured and will guide reservoir management.

Serge Shapiro gave an interesting talk about imaging of the permeability distribution using microseismicity. The idea is that fluid injections in rock (e.g. borehole hydraulic tests) induce microseismicity, with the triggering front propagating like a diffusion process. He discussed an anisotropic model for front propagation and used this in the inversion of microseismicity data. He showed that this type of inversion can be used to characterize heterogeneous distributions of hydraulic properties of reservoirs on the scale of several hundreds of meters.

Larry Myer talked about modelling of wave propagation in fractured rocks. He discussed two approaches, namely modelling fractures explicitly as discrete features and implicitly through an effective medium representation. Single fractures cause frequency dependent reflections and time delays in plane waves, as a result of localized discontinuities in the displacement field. Accounting for such discontinuities in effective medium theory leads to frequency-dependent group velocity surfaces with stop and pass band segments. Numerical simulations lead to reflection data with much more information in the coda than with the conventional static effective medium approximation. This suggests that analysis of the coda may be used as a diagnostic tool for fracture characterization.

Prof. Epov gave an effective presentation about high-frequency isoparametric logging induction sounding (HILIS) in inclined-horizontal wells. HILIS measures the electrical resistivity distribution around a borehole and is applied mainly for investigations of conductive terrigenous media. Prof. Epov showed that, with HILIS, the effective thickness of an oil-saturated formation can be determined, that not only distances from a borehole to boundaries but also inclination angles can be determined and that HILIS helps to single out low permeable high resistive zones crossing a reservoir.

Choon Park's presentation was about feasibility tests of multichannel analysis of surface waves (MASW) for non-destructive testing of pavement systems. Unlike exploration seismology, where surface waves are generally considered as noise, MASW employs surface waves generated by a light hammer source to retrieve information about the elastic properties of pavement systems. The method is based on the analysis of fundamental and higher order modes, recorded by horizontal and vertical geophones. Multi-component recording can be very useful for a reliable identification of complicated seismic events in a pavement system.

Kazuki Koketsu talked about observations and simulations of 3D propagation of seismic ground motion from earthquakes. The simulation method he employed is a pseudospectral method in which the horizontal spatial differentiations are performed analytically in the wave number domain and the vertical differentiations are implemented as a fourth order finite difference operator in the space domain. This hybrid approach facilitates the implementation of large scale simulations on parallel computers. The method was used to model the 1995 Kobe earthquake, the 1999 Chi-Chi earthquake and the Kanto basin of Japan. The hybrid modelling technique proves to be a very useful scientific tool for understanding these seismological observations.

Mrs Sally Zinke, president of the SEG, concluded the first part of the conference by giving her view on the impact of technology using a number of case studies. She appealed for a broadening of the SEG's scope beyond the 'traditional' focus on exploration geophysics so that environmental applications, civil engineering applications, etc. could be put on the agenda as well. Of course this might involve a change of name of the society. In order to leave the acronym intact, may I suggest 'Society of Exciting Geophysics'?

The next two days of the conference programme were organized in two parallel oral sessions as well as poster sessions. Like the plenary session on the first day, these sessions covered a wide variety of imaging-related subjects, such as data processing, anisotropy, ground penetrating radar, reservoir characterization, borehole geophysics, earthquake seismology, as well as civil engineering and environmental applications.

All in all I look back at a very stimulating conference with high quality presentations, a wide variety of subjects, a very pleasant atmosphere and an excellent organization. If only our Dutch taxi system was half as well organized...

## Berlin hosts GAP

The Geophysical Action Programme, which was first established at Karlsruhe in 1985, is holding its annual meeting on 24–27 May at the Technical University of Berlin under the auspices of the Department of Applied Geophysics. Students from many European countries attend this gathering (part-sponsored by EAGE) of students studying geophysics or related geosciences. For more information, see the Calendar or Web: http://gap2001.tu-berlin.de.