

PETROLEUM GEOLOGISCHE KRING

KONINKLIJK NEDERLANDS GEOLOGISCH EN MIJNBOUWKUNDIG GENOOTSCHAP



PGK

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Venue:	PGK's monthly lectures are held at the KIVI building, Prinsessegracht 23, Den Haag. Drinks are served from 5 PM; the lecture starts at 6 PM.	Labels:	Last update June 2000.
Membership:	Please apply for membership by contacting the secretariat. Annual dues: Fl 30,-		
Accounts:	VSB Bank: 88 65 82 733 (PGK, Den Haag)	Postbank: 4074482 (PGK, Den Haag)	

NOVEMBER NEWSLETTER

NOVEMBER 15TH:

PGK and the **Dutch Petrophysical Society** are having their **annual joint meeting** in the KIVI building. This year's lecture is presented by **Martin Kraaijveld** from Shell Int. E&P.

QUANTITATIVE ANALYSIS OF CORE AND BOREHOLE IMAGES

Core and borehole images are generally interpreted in a qualitative and interactive manner, predominantly for geological applications. Quantitative use of image data for both geological and petrophysical applications is relatively rare, mainly due to the unavailability of adequate image analysis technology for petroleum engineers. Driven by the increase in computing power and the world-wide effort on image analysis research, sophisticated technology has been developed that allows quick and semi-automatic interpretation of large amounts of image data. This technology, if properly adapted and harnessed, can be of benefit to both petrophysicists and geologists. We have adapted, and where needed further developed, several techniques from the image analysis literature that support the quantitative interpretation of core and borehole image data. The development was performed in co-operation with leading University groups. The technology has recently been made available to all Shell Operating Units to allow them to perform their own in-house quantitative analysis. The technology made available to date consists of four modules:

- 1. Application of new image processing techniques to automatically estimate dip and azimuth.*
- 2. Facies classification based on the extraction of image textural attributes and statistical pattern recognition techniques. Successful applications of this module have been achieved for a variety of (complex) reservoir types.*
- 3. Thin-bed analysis to extract properties such as bed orientation, bed boundaries, degree of anisotropy, and, after proper calibration, shale volume and net-to-gross. These properties feed into programs to invert resistivity logs and determine hydrocarbon saturation.*
- 4. Image enhancement to remove noise and acquisition artefacts. This module is a pre-processing step yielding clean images for input into the previous interpretation modules.*

Ongoing developments are to establish links to feed image data directly into our static and dynamic reservoir modelling packages, and to perform fracture detection. To allow a quick dissemination of the new technology into our Operating Units, we have initiated a collaborative effort with Z&S / Baker-Atlas to integrate our software into their Recall / Review environment. Recall / Review is

available in all Shell Operating Units as one of the platforms for interactive borehole image interpretation and serves as a corporate database for core and log data in others. Due to the modular architecture of the Toolbox, however, implementations on other platforms can relatively easily be developed. To further facilitate the uptake of the technology, dedicated training courses are provided on-site to Shell OUs.

You can find the full programme of the DPS technical lecture series at:
<http://wwwwtg.mp.tudelft.nl/~dps/progr0001.html>

DECEMBER EVENT

This year's december meeting will be held on **December the 13th the second Wednesday of the month**. The event will start with the usual drinks at 17:00 hrs. The december lecture at 18:00 hrs will be given by Henk Duyverman (Terra Incognita) under the title "**In the footsteps of Willem Barentz** (*Willem Barentz achterna*). After the lecture all PGK members and sponsors are invited to the bar for **food and drinks**. Those of you who want to join please register with the secretary by e-mail (secretary-pgk@panterra.nl) or telephone (071-3013235).

OTHER EVENTS

24 November: De bodem van Nederland dichterbij! Naturalis, Leiden. Aanvang 13.00 uur. Organisatie: TNO-NITG in samenwerking met Naturalis ter gelegenheid van het verschijnen van de CD ROM 'De geologie van Nederland'. Fl. 50,- (incl. CD) http://www.kngmg.nl/insrv_89.htm (register: e-mail: c.mamadeus@nitg.tno.nl)

1 December: Eighth Lustrum Symposium Faculty of Earth Sciences at Vrije Universiteit Amsterdam; **Prerequisites for modern earth sciences; cooperation, innovation and societal relevance**. Info: Anco Lankreijer: ana@geo.vu.nl

NEWS FROM THE BOARD

Having served for two years our chairman Fokke Rispens will step back from the PGK-board in February 2001. This means that the position of vice-chairman will become vacant; any members that are interested in taking part in the board are encouraged to contact the secretary.

The following companies are warmly thanked for sponsoring the PGK in 2000:

*Amoco Netherlands - Argo Geological Consultants - Chevron USA Inc., The Neth. Branch
- Clyde Petroleum - DSM Energie - Energie Beheer Nederland - Elf Petroland
Enres International - Fugro Inpark - Hogeschool Rotterdam, sectie aardrijkskunde
Nederlandse Aardolie Mij - NITG-TNO - Oranje Nassau Energie
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