

# PETROLEUM GEOLOGISCHE KRING

KONINKLIJK NEDERLANDS GEOLOGISCH EN MIJNBOUWKUNDIG GENOOTSCHAP



Treasurer: Drs. Maaïke Koopmans  
c/o Wintershall Noordzee BV  
PO Box 82301  
2508 EH Den Haag  
phone: 070 - 358 31 08  
Bank account: 88 65 82 733 (VSB, Den Haag)  
Giro account: 40 74 482

Secretary: Dr. A. Ewan Campbell  
NITG - TNO  
P.O. Box 6012  
2600 JA Delft  
phone: 015 - 269 6731  
home: 015 - 261 6075  
fax: 015 - 256 4800

## JANUARY 1997 NEWSLETTER

### FORTHCOMING PGK EVENTS

Jan.15

Dr. S.D. Nio  
ENRES Int.

Predictive Sequence Stratigraphy Using Computer  
Analysis Of Geophysical Logs And Their Applications In  
Hydrocarbon E&P

### PGK JANUARY MEETING

The PGK January meeting will be held on **WEDNESDAY, January 15**, at 17:45 pm and will be preceded by aperitifs from 17:00 pm onwards. The lecture will be held at the KIVI building, Prinsessegracht 23, The Hague. Dr. S.D. Nio of ENRES International will speak about: "**Predictive Sequence Stratigraphy Using Computer Analysis Of Geophysical Logs And Their Applications In Hydrocarbon E&P.**". The speaker has provided the following abstract:

*The application of sequence stratigraphic concepts in hydrocarbon exploration and production has become standard for subsurface stratigraphic correlations. Recognition of the significance, the lateral correlation and the erosional magnitude of sequence boundaries is an important but still elusive aspect of sequence stratigraphic analysis. Standard well-to-well correlation using extensive high-resolution biostratigraphic data followed by a detailed wireline log and core data correlation, still cannot avoid a mixed framework of time and lithostratigraphic correlation lines. In intervals with poor biostratigraphic data or even in barren sequences, a time-related, isochronous correlation is difficult or even impossible to establish.*

*A new approach to solving these problems has been developed by using the presence of frequencies in geophysical logs which are related to cycles in the sedimentary rock succession. These log data provide an excellent database for frequency or time-series analysis, because they meet essential requirements for effective and objective sampling such as continuity, resolution and features of depositional conditions.*

*Three types of computer frequency analyses can be carried out: 1) Maximum Entropy Spectral Analysis (MESA), 2) Prediction Error Filter Analysis (PEFA), and, 3) Integrated Prediction Error Filter Analysis (INPEFA).*

*The regional correlations derived from these analyses are based on the identification of synchronous geological events representing changes in either climate, sea level or tectonic conditions. Once a framework has been established, it can be calibrated in time by identifying smaller-scale climate cycles of precisely-defined duration. By isolating the climatic component of depositional facies variation, it is possible to define regional and local variations due to tectonic and allocyclic factors. Examples from the Rotliegend, Brent Group, Cretaceous chalk and the Gulf of Suez will be discussed.*

*Frequency analysis of geophysical logs can be used as a stand-alone tool, but its integration with conventional high-resolution stratigraphy makes it a powerful and cost-efficient method in hydrocarbon exploration and production.*

## **PICK UP YOUR WHISKY GLASSES NOW!**

Will all members who ordered PGK whisky tumblers and not yet paid or taken delivery of them please pay f 10- per glass ordered into one of the PGK accounts mentioned at the front of this newsletter. If your glasses were not picked up at the monthly meeting in December please contact the secretary now. Glasses will be available at the February meeting. All glasses unclaimed after April will be sold on to members on a first-come-first-served basis. All bank and Giro payments should clearly state "whisky glasses".

## **JOB OPPORTUNITY**

Wintershall Noordzee B.V. has an opportunity in Den Haag for a Senior Exploration Geophysicist: relevant degree with 10 years industry experience. The candidate will be expected to supervise a variety of geophysical activities in support of exploration activities. For more information contact Mr. J.Maartense, 070-35883100. Written applications and detailed resumes should be sent to Mr. J.Maartense, Head of Joint Venture Personnel, Wintershall Noordzee B.V., Eisenhowerlaan 142, 2517 KN, Den Haag.

## **1997 PROGRAMME**

The programme of PGK events for 1997 has now been finalised. Please keep reading the newsletter for extra events or changes to the listed programme.

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|---------|--|---|
| 15-1    | Swie Djin Nio<br>ENRES International               | Predictive Sequence Stratigraphy Using Computer Analysis of Geophysical Logs and Their Applications in Hydrocarbon E&P            |
| 19-2    | Andrew Hurst<br>Univ. of Aberdeen                  | Rims of Prospectivity   |
| 19-2    | PGK  | Annual General Meeting and Annual Dinner  |
| 19-3    | Mark Geluk<br>NITG - TNO                           | Palaeotectonics and Palaeogeography of The Zechstein in The Netherlands.  |
| 21-29/3 | PGK/PDO  | Field Seminar , The Petroleum Geology of Oman.  |
| 16-4    | Tom Reijers<br>SPDC Nigeria                        | Aim, Scope and Benefit of work of the Stratigraphic Commission of the Niger Delta.  |
| 21-5    | Simon Knight<br>TU-Delft, TG                       | Quantifying the Stratigraphic and Structural Controls of Reservoir Connectivity using 3-D Outcrop Models.                         |
| 19-6    | J.-Michel Champanhet <sup>§</sup><br>Elf Petroland | The Use of Coal Facies in Stratigraphic Corellation of The Carboniferous of The Netherlands Offshore                              |
| §       | <i>Subject to confirmation.</i>                    |   |
| 17-9    | Janos Urai<br>Univ. of Aachen                      | The Sealing Capacity of Mudstones   |
| 26-28/9 | Leo Alblas<br>PGK                                  | Annual Field Seminar , The Geology of the Main Bundsandstein, of The Eiffel Region: Outcrop Analogues for the Southern North Sea. |
| 15-10   | Hans Dronkert<br>TU-Delft, TG                      | The Petroleum Potential of Tajikistan   |
| 19-11   | Cees van Oosterom<br>CONOCO                        | End of Harvest Mode   |
| 17-12   | François Guillocheau<br>CNRS Univ. de Rennes       | The Geology of French Wine.   |