

# PETROLEUM GEOLOGISCHE KRING

KONINKLIJK NEDERLANDS GEOLOGISCH MIJNBOUWKUNDIG GENOOTSCHAP **PGK**



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<b>Venue:</b>	PGK's monthly meetings are held at the KIVI building, Prinsessegracht 23, Den Haag. Drinks are served from 17:00 hrs; the lecture starts at 18:00hrs.		<a href="http://www.pgknet.nl">www.pgknet.nl</a>
<b>Membership:</b>	Apply for membership by contacting the secretariat. The annual fee is €15.-		
<b>Accounts:</b>	Fortis Bank: 88.65.82.733 (PGK, Den Haag)		

## APRIL 2006 NEWSLETTER

### **19 APRIL: MONTHLY MEETING AND KNGMG ANNUAL MEETING**

The next PGK meeting will be on Wednesday, **April 19th**, 2006. As usual, social hour (free drinks) will be from 17:00 to 18:00 hrs. From 18:00 to 19:00 the KNGMG will have their annual meeting. At 19:00 **Herald Ligtenberg** (dGB Earth Sciences) will give a lecture on:

#### **New seismic interpretation methods:**

#### **Analysing fluid migration paths to assist exploration and unravelling the depositional setting by means of sequence stratigraphic principles**

*Please see other side of this newsletter for the lecture abstract.*

### **MAY MEETING:**

The May meeting will be held on **Wednesday May 17<sup>th</sup>, 2006**. The programme will be as follows:

17:00-18:00 hrs: Social hour (free drinks)  
18:00-19:00 hrs: Lecture by Lucia van Geuns (Clingendael)

### **NEW MEMBERS**

Applications for memberships have been received from Liesbeth Zwart (TNO) and Ruben Thomassen (TU Delft). If no objections are received prior to or during the next meeting, they are automatically admitted as members of our society.



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**Monthly meeting:** Wednesday 19 April 2006  
**Address:** KIVI building, Prinsessegracht 23, Den Haag  
**Social hour:** (free drinks) between 17:00 and 18:00 hrs  
**Annual KNGMG Meeting:** at 18:00 hrs  
**Lecture:** at 19:00 hrs

**New seismic interpretation methods:  
Analysing fluid migration paths to assist exploration and unravelling the  
depositional setting by means of sequence stratigraphic principles**

Herald Ligtenberg (dGB Earth Sciences)

## ABSTRACT

Understanding the hydrocarbon migration system in the subsurface is a key aspect of oil and gas exploration. It is well known that conventional 3D seismic data contains information about hydrocarbon accumulations. Less known is the fact that 3D seismic data also contains information about hydrocarbon migration paths in the form of vertical noise trails. A method has been developed to highlight vertical noise trails in seismic data semi-automatically, using assemblies of directive multi-trace seismic attributes and neural network technology. The results of this detection method yields valuable information about the origin of hydrocarbons, about migration paths from source to prospect and about leakage or spillage from these prospects to shallow gas pockets or to the sea bed. Besides, the results reveal the sealing quality of faults, provide information on overpressure and whether prospects are charged or not. All these aspects are useful information for prospect evaluation, basin modelling studies and for an increased understanding of the petroleum system.

The presentation will cover a brief explanation of the used technology and the workflow. This will be followed with various examples of its application and subsequent interpretation of the results. These include the explanation of various seismic indicators for hydrocarbon migration, its application to fault seal analysis, integration of the results with basin modelling, enhancement of hydrocarbon expulsion in seismics and its use in prospect evaluation.

In addition, dGB in collaboration with Statoil, Shell, BG-Group, TNO and the Dutch government have developed a unique and innovative seismic sequence stratigraphic interpretation system (OpendTect SSIS). The system enables tracking of sequence boundaries; transformation of any 3D seismic volume to the Wheeler domain, taking into account horizon truncations and non-depositional/ erosional hiatuses between horizons; and makes it possible to perform detailed system tract interpretation of the data. The seismic sequence stratigraphic workflow and examples of achieved results will be presented.

**Please post this page your company's notice board. Members may be accompanied by guests!**

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