Field Seminar
in the Potiguar
and
Pernambuco-Paraíba basins

4th to 13th of August 2003

Field leaders:
Paulo Roberto Cordeiro de Farias
Eduardo A.M. Koutsoukos
Francisco Henrique de Oliveira Lima

Participants:

Prof. Dr. Bernd-Dietrich Erdtmann (TUB Berlin; Berni.Erdt@TU-Berlin.DE)

Dr. Holger Gebhardt (TUB Berlim & Univ. of Kiel; hg@gpi.uni-kiel.de)

Prof. Dr. Samuel O. Akande (Univ. of Illorin, Nigeria; sakande@skanner.com)

Dr. A. Festus Abimbola (Univ. of Ilorin)

Dra. Laureen Sally da Rosa Alves (UERJ; lara@uerj.br)

Cleber Fernandes Alves Barbosa (UFRJ; alvescf@hotmail.com)

Dr. Eduardo A.M. Koutsoukos (PETROBRAS-CENPES, Rio de Janeiro,
Tel. +55-21-3865-6417; koutsoukos@cenpes.petrobras.com.br)

Dr. Francisco Henrique de Oliveira Lima (PETROBRAS-CENPES, Rio de Janeiro,
Tel. +55-213865-6564; henriquel@cenpes.petrobras.com.br)
Talks presented on the 4\textsuperscript{th} of August at PETROBRAS-E&P-RNCE

\textbf{Talk \#1 (10-11:00hs):}

\textbf{Volkswagen-Stiftung Program of Partnerships: Trilateral joint research project (Technische Universität Berlin, Germany / University of Ilori, Nigeria / PETROBRAS-CENPES)}

\textbf{Evolution of Dahomey (Nigeria-Togo) and Potiguar (NE Brazil) basins with respect to processes of sedimentation, paleoenvironments and paleo-oceanology during Late Cretaceous to Paleogene times (http://www.tu-berlin.de/zuv/IIIC/forfat/06/32/11780.htm)} by Prof. Dr. \textbf{Bernd-Dietrich Erdtmann} (Institut für Angewandte Geowissenschaften, Technische Universität Berlin, Sekr. EB10, D-10587 Berlin, Germany; e-mail: Berni.Erdt@TU-Berlin.DE)

Abstract: Intended is a documentation of the processes and stages involved in the evolution of sedimentary successions of two basins on opposite sides of the Atlantic Ocean during a geological period when the continental separation of West Africa and South America reached a stage at which individual basin development may have dominated, subsequent to structural arrangements. Processes and principal potential resources related to at least the three major stages of development of individual basins, will be characterised by standard techniques including facies models and correlation across the pristine Guinea Branch of the South Atlantic. Depositional models for the sedimentation of conglomerates, sandstones, black shales, limestones and phosphorites will provide new ideas for hydrocarbon exploration and other important raw material.

\textbf{Talk \#2 (11-12:00hs):}

\textbf{Foraminiferal response to sea-level change, organic flux and oxygen deficiency in the Cenomanian of the Tarfaya Basin, southern Morocco.}
Abstract: The Cenomanian "Mohammed Plage" coastal section in the Tarfaya Basin (southern Morocco) provides a key section to investigate the Cenomanian sea-level history and basin subsidence. Based on benthic foraminiferal assemblage counts and additional proxies (P/B-ratio, planktic foraminifera morphogroups, TOC), a canonical correspondence analysis (CCA) was performed. The results show a general deepening trend for the investigated section. Most important factor identified for the ordination of species and samples was water-depth. The CCA identified typical "Shallow-water species" (including Bolivina anambra, Globulina lacrima, Lenticulina spissocostata, Spiroplactammina sp.), "deep-water species" (Praebulimina nannina, Gavelinella dakotensis, Gavelinella sp., Laevidentalina debilis, Saccammina alexanderi, Valvulineria lenticula) and unrestricted or intermediate species (Gabonita levis, Gabonita obesa, Neobulimina albertensis, Lingulogavelinella asterigerinoides, Lenticulina gaultina, Haplophragmoides gigas, Haplophragmoides bauchensis, Trochammina taylorana). The temporal succession of benthic foraminiferal assemblages indicate repeated periods of shallowing within the general deepening trend, in particular in the lower portion of the investigated section (R. brotzeni- and R. reicheli-planktic foraminiferal zones). The assemblages from the upper portion (R. cushmani and W. archaeocretacea zones) do not indicate distinct periods of shallow water-depths anymore. Restricted assemblages were found when the onlap of an intensive oxygen minimum zone inhibited a divers benthic community. Abundant high organic matter flux indicators at the base of the section point to an active upwelling cell off north-west Africa already during the early Cenomanian.

Talk #3 (14-15:00hs):

Cretaceous Source Rocks and Thermal Maturation in the Nigerian Sedimentary Basins - Implications for Offshore Petroleum Exploration by Prof. Dr. Samuel O. Akande (Department of Geology, University of Ilorin, P.M. B. 1515, Ilorin, Kwara State, Nigeria; e-mail: sakande@skannet.com)

Talk #4 (15-16:00hs):

Cretaceous to Tertiary Phosphorites and Ironstones in the Nigerian Sedimentary Basins
by Dr. Akinlolu Festus Abimbola (Department of Geology, University of Ibadan, Nigeria).

16-16:30hs: Coffee-break.

**Talk #5 (16:30-17:30hs):**

*The Cretaceous-Paleogene Boundary in the Pernambuco-Paraíba Basin: Stratigraphy and Sequence of events.*

by Eduardo A. M. Koutsoukos (PETROBRAS-CENPES/BPA; e-mail: koutsoukos@cenpes.petrobras.com.br)