In der Probe 1082IV wurden die folgenden Radiolarien identifiziert: *Holocryptocanium burbi* Dumitrica 1970; *Holocryptocanium tuberculatum* Dumitrica 1970; *Pseudodictyomitra pseudomacrocephala* (Squinabol 1903); *Novixitus weyli* Schmidt-Effing 1980; *Obesacapsula costarricensis* Schmidt-Effing 1980; *Thanarla pulchra* (Squinabol 1904); *Thanarla veneta* (Squinabol 1903); *Xitus specularius* (Aliev 1965); *Stichomitra communis* Squinabol 1903; *Dorypyle anisa* (Foreman 1978); *Praeconocaryomma universa* Pessagno 1976; *Dactyliodiscus* cf. *cayeuxi* Squinabol 1903; *Pseudoaulophacus sculptus* (Squinabol 1904). Nach Thurow (1988) ist das erste Auftreten von *H. burbi* in das oberste Unteralb zu stellen, dasjenige von *P. pseudomacrocephala* in das mittlere Oberalb. O'Dogherty (1994) hat kürzere Reichweiten einiger Arten gezeigt: *D. anisa* von U.A. 14 bis 16 (oberstes Alb bis Unter-Cenoman), *P. sculptus* von U.A. 10 bis 15 (Mittelalb bis unterstes Cenoman). Daher wird der Horizont der Probe 1082IV in das Oberalb bis Unter-Cenoman eingestuft.

In der Probe 1085 wurden die folgenden Arten identifiziert: *Pseudodictyomitra leptoconica* (Foreman 1973); *Pseudodictyomitra lodogaensis* Pessagno 1977; *Xitus elegans* (Squinabol 1903); *Dictyomitra pseudoscalaris* Tan 1927; *Cryptamphorella clivosa* (Aliev 1967); *Thanarla* cf. *pacifica* Nakaseko & Nishimura 1981; *Thanarla brouweri* (Tan 1927); *Thanarla lacrimula* (Foreman 1973); *Stichocapsa orca* (Foreman 1975); *Hiscocapsa grutterinki* (Tan 1927); *Parvicingula* spp.; *Cryptamphorella* spp. O'Dogherty (1994) hat die Reichweiten einiger Arten präzisiert: *P. lodogaensis* von U.A. 4 bis 9 (Unter-Apt bis oberstes Apt), *T. lacrimula* von U.A. 1 bis 6 (Oberstes Barreme bis Mittel-Apt), *H. grutterinki* von U.A. 1 bis 9 (Oberstes Barreme bis oberstes Apt). Daher ist die Probe 1085 in das Apt zu stellen, augenscheinlich wesentlich älter als 1082IV.

Damit ist zu schlussfolgern, dass der Altersumfang der Radiolarien-führenden Gesteine von Santa Elena wesentlich größer ist als zunächst von Schmidt-Effing (1980) angenommen.

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The conjugate margins of Morocco and Nova Scotia, Canada

Tari, G.[1], Brown, D.[2], Jabour, H.[3], Hafid, M.[4], Louden, K.[5] & Zizi, M.[6]

[1] OMV, Vienna, Austria;
[2] Nova Scotia Offshore Petroleum Board, Halifax, Nova Scotia, Canada;
[3] ONHYM, Rabat, Morocco;
[4] Ibn Tofail University, Kenitra, Morocco;
[5] Dalhousie University, Halifax, Nova Scotia, Canada;
[6] Ziz Geoconsulting, Rabat, Morocco

The salt basins of Atlantic Morocco and Nova Scotia were developed on the conjugate passive margins of the Central Atlantic. The dimensions of both of these basins are about 100 km width on average and almost 1000 km in length. As opposed to the Aptian salt basins of the South Atlantic, in the Central Atlantic the salt was deposited during the last stage of rifting prior to the continental breakup in the Uppermost Triassic and Lower Jurassic.

The syn-rift evolution of these conjugate margins is best understood in the context of a minimum closure reconstruction which is based on regional-scale structural data sets. On the Moroccan margin, contrary to the dominant structural fabric described onshore, the dominant structural trend is NW-SE in the central segment of the offshore. In particular, the structures associated with the Tafelney Plateau trend obliquely both to the coastline/shelf-edge and to the general NE-SW Atlas trend. A basement high beneath the Tafelney Plateau is interpreted as a syn-rift accommodation zone analogous to many well-studied examples in the present-day East African rift system. It developed between two normal fault systems with opposing polarities, i.e. SE-dipping syn-rift faults to the north of it and NW-dipping syn-rift faults to the south of it, defining lower/upper plate margins. The actual Early to Middle Jurassic breakup between Africa and North America occurred obliquely across the accommodation zone leaving most of it on the Moroccan margin. The significant along-strike variations of the conjugate margins of Morocco and Nova Scotia in crustal structure, syn-rift salt distribution and therefore salt tectonic styles are all attributed to changes in the style of rifting along the margin.

The continent-oceanic boundary on both margins is supposed to track the basinward limit of the salt based on traditional potential field data interpretation. However, new ultra-deepwater seismic data sets well outboard of the conjugate salt basins, show very well developed syn-rift half-grabens with locally up to 3 km section in them. The seismic signature of these prominent syn-rift grabens is identical on both margins suggesting highly extended continental crust.

During the prolonged post-rift period, the conjugate margins evolved separately, but many features, such as the presence of very advanced salt structures, are common to both margins. A major difference in the post-rift evolution of these margins is the Neogene to Recent inversion of the Atlas system on the Moroccan margin. Whereas this neotectonic phase is well documented onshore, recently acquired and vintage academic reflection seismic data in

the offshore Essaouira/Safi segment show the presence of inverted structures in the ultra-deepwater area as well, outboard of the salt basin.

Deepwater exploration in NW Egypt: a case study of collaborative industry-academia efforts

TARI, G.[1], MASCLE, J.[2], NOVOTNY, B.[3], KOHAZY, R.[1] & KROIS, P.[1]

[1] OMV Exploration and Production, Vienna, Austria;
[2] Geosciences-Azur, Villefranche/mer, France;
[3] OMV Egypt, Cairo, Egypt

The deepwater Herodotus Basin of NW Egypt represents a very underexplored region of the eastern Mediterranean Basin to date. The Matruh Trough is located along this segment of the Egyptian offshore covering an area of about 10000 km^2. This trough, trending almost perpendicularly to the coastline, is located west of the Nile Delta province and north of the Western Desert and its offshore part extends across a relatively narrow shelf into the deepwater. OMV's Obaiyed Offshore block, covering most of the Matruh Trough, is considered as a prospective undrilled deepwater block down dip from the numerous gas and oil fields of the Western Desert petroleum province. Based on seismic reflection data sets, at least five other deepwater play types have been identified in the block. Most of them related to a large shale detachment system and therefore are considered unique to the Matruh Trough. Significant oil and gas shows from the onshore Mersa Matruh-1 well, located near the coastline, support the offshore extension of the Matruh Trough with a working petroleum system.
Academic research in the same deepwater area is focused on seafloor processes, including some presently active prominent mud-volcanoes detected by high-resolution swath bathymetric surveys. Comparing and merging the independent academic and industry data sets provided clear evidence for a an active deepwater petroleum system. The currently active mud-volcanoes are being fed from below the Messinian salt level and therefore these features prove the present-day generation of thermogenic gas in this part of offshore Egypt, similarly to the Nile Cone.

Definition of Top-Crystalline Basement in the Upper Austrian Molasse Basin

THÜRSCHMID, G.[1], SACHSENHOFER, R.F.[1] & TROISS, W.[2]

[1] Department of Applied Geosciences and Geophysics, Montanuniversität Leoben, Peter-Tunner-Str. 5, 8700 Leoben, Austria; gloria.thuerschmid@stud.unileoben.ac.at; reinhard.sachsenhofer@unileoben.ac.at;
[2] RAG Rohöl-Aufsuchungs Aktiengesellschaft, Schwarzenbergplatz 16, 1015 Wien, Austria; wilma.troiss@rag-austria.at

In cooperation with Rohöl-Aufsuchungs Aktiengesellschaft (RAG) a new log-based method is developed to identify precisely the depth of the top of the crystalline basement (Top-XX) within the Austrian Molasse basin.
Currently, different geophysical logs are used within the company with different emphasis. This results in varying depth estimates for Top-XX. Among the logs available (gamma ray, spontaneous potential, photoelectric effect, caliper, sonic, porosity, resistivity, density and formation micro imaging logs), resistivity logs are predominantely used to define the boundary.
Within the frame of this diploma thesis, six representative wells have been analyzed, whereof two wells provide each a crystalline basement overlain by sandstone horizons of Eocene (HIER-002A, MLRT-003C), Cenomanian (BH-N-001, BH-N-002) or Jurassic age (KH-003, V-037).
Based on detailed core inspections, Top-XX as well as the lithology above and below that boundary have been determined. Additionally, thin sections of representative core samples have been interpreted for petrographical composition. To determine log depths of the top of the crystalline basement, (total and spectral) core gamma ray (Core-GR) measurements were performed.
The result of this study indicates, that the well logging signal is influenced by several factors. These are, among others, the lithology, as well as heavy mineral contents at the base of the overlying sedimentary succession, but also the lithology and the degree of weathering of the crystalline basement (magmatic versus metamorphic). Therefore, a general log pattern across the Top-XX in the investigated wells cannot be observed.
However, close inspections show that all wells including Mesozoic sandstones overlying plutonic rocks exhibit high values of total GR at the base of the sandstones and significantly lower values of total GR within the uppermost part of the crystalline basement. Spectral Core-GR measurements indicate that high GR values are caused by heavy minerals (high contents of Th, U), whereas low GR contents result from weathering of the crystalline basement (removal of K). The content of potassium increases downwards, which suggests unweathered crystalline rocks including potassium feldspars.
In contrast to Mesozoic sandstones, Eocene sandstones provide a positive correlation of total GR values and the content of potassium. In this case, heavy minerals are not dominating GR values. According to the lithology of the crystalline basement, GR values are either increasing (metamorphic basement) or do not show significant changes (plutonitic rocks). Further investigations of different wells are necessary to determine if this is a general trend.
In summary, significant changes at the top of the crystalline basement are primarily visible in the GR log.