

EUROPEAN REGION NEWSLETTER

Unlocking the Future



June 2011, Vol. 6

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PRESIDENT'S MESSAGE



Dear Reader,

This is my final Newsletter message because my term as President of the European Region expires at the end of June. Vlasta Dvořáková will take over from me and I will continue as Past President for a further two years. It has been an honour and a pleasure for me to serve the membership and it has opened my eyes to what a truly great organisation the AAPG is. I have been a member of the AAPG since 1977 and early in my career I did not realise the benefits of membership and therefore did not use the products and services that were available at the time. Of course the AAPG has changed over the past 30 years, having become a global organisation with a hugely expanded range of services. I believe however that the majority of members do not maximise the benefits of membership and may be largely ignorant of what is available. I encourage all members to visit www.aapg.org and review the range of conferences, publications, information and educational opportunities and to encourage colleagues who are not yet members to do the same. Membership in the AAPG is not only about the science but also about the opportunity to meet geoscientists from all over the world and discuss issues of common interest.

ExxonMobil, Shell, Total, MOL, Centrica, Nexen, Sterling, Petrom (OMV), RPS Energy, Baker Hughes, Maersk, Hess, Statoil, Serica Energy, BG Group, and the UK Scout Group. Our thanks go to these organisations, without whose support we would not be able to run the competition. I believe that the industry is becoming aware of the huge value of the competition and as it grows I hope that more companies will want to become sponsors. We had a panel of 8 excellent judges who were very impressed by the event, the enthusiasm of the teams and the quality of the technical presentations. I encourage you to visit the AAPG European Office section of the AAPG website to view a short video of the competition. The winners, Southampton University in the UK, went on to take second place in the global competition at the Annual Convention in Houston and are to be congratulated on their performance. We are planning to organise future European competitions such that we can accommodate 30 teams, which will require some logistical changes and substantially more financial support from industry. So, if your organisation has not contributed, please make every effort to inform your leadership team of the benefits of the programme and encourage them to support it.

It's election time again. Voting is taking place for the President Elect, Treasurer and Secretary of the European Council and for delegates to the House of Delegates, the AAPG's parliamentary body. I encourage all Active members to vote and all qualified Associate members to convert to Active status, in order to be able to take part in this democratic process in the future.

Over the recent past the AAPG has concentrated on providing services for students and young professionals, who are the foundations of our membership. In the European Region there are 55 student chapters, of which 32 are active and 16 of these sent teams to the Region's Imperial Barrel Award (IBA) competition this year. We have Young Professionals Chapters in London, Aberdeen and Copenhagen and it is hoped to create more in the near future, in order to provide a bridge between student and professional membership. I would like to express my thanks to Florentina Enea, chair of the European Student and Young Professional Subcommittee, for her and her team's unflagging efforts and enthusiasm in promoting the creation of chapters. They have been instrumental in encouraging collaboration between chapters and in the organisation of programmes of lectures, field trips and social events.

I would like to thank the European Region Council, Subcommittees and AAPG staff for providing me with encouragement and support during my tenure as President. I have really enjoyed being more involved with the AAPG and I have made many new friends in the process. I will be continuing my involvement, not only through the position of Past President, but also as Secretary/Editor of the House of Delegates. It will be my job to continue the good work of Patrick Gooding in producing the Delegates Voice, the quarterly newsletter of the House of Delegates. Finally, I would like to wish Vlasta Dvorakova good luck during her term as President, I am sure that she will enjoy it as much as I have. ■

David R. Cook
AAPG European Region President

The European IBA competition, which was again held in Prague this year, was a huge success with 17 university teams from 9 countries taking part, from Lisbon in the west to Tyumen in the east. The event was sponsored by

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Controls on Natural Gas Seepage and Focused Fluid Flow on the South Atlantic and the Barents Sea

Zahie Anka ⁽¹⁾ as Head of a Helmholtz-University Young Investigator Group ⁽²⁾
and part of the “Methane on the Move” group ^(*)

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Leakage of liquid and gaseous hydrocarbons through focused fluid flow systems is a process recognised on most sedimentary basins and continental margins. Studying the abundance, distribution and drivers for this process is crucial to understand its role on geological phenomena such as submarine slope stability and gas hydrate dynamics. Additionally, since natural gas seepage is a source to the ocean and atmosphere of powerful greenhouse gases such as methane, it might have played a role on world's ocean chemistry and Earth's past maximum-thermal events. Moreover, as this process is usually associated to the distribution of sub-surface hydrocarbon accumulations, it has a clearly significant economic importance.

Gas chimneys, mud volcanoes, seabed pockmarks, carbonate mounds have been recognized to be indicators of active natural gas migration and leakage from deeper sources and reservoirs (e.g. (Anka et al., 2009; Berndt, 2005; Gay et al., 2007; Hornbach et al., 2007; Hovland and Judd, 1988; Leon et al., 2006; Loncke et al., 2004; Orange et al., 2002). Recognition of similar buried features could indicate the occurrence of comparable events staggered through time, which may be triggered by sea-level changes, uplift and erosions, regional and local tectonics, and/or glacial cycles. Although great deal of work has been performed on the identification and description of these indicators along continental margins (i.e.(Berndt, 2005; Gay et al., 2007; Hornbach et al., 2007; Hovland and Judd, 1988; Leon et al., 2006; Orange et al., 1999), the deeper hydrocarbon systems that feed the seeps

are seldom addressed, much less the thermogenic-gas fluxes quantified. Thus, a real mass balance of the global amounts of thermally-generated methane emissions and their temporal variability is yet to be investigated. A detailed study is currently being undertaken in this sense by a recently created Helmholtz-University Young Investigator Group at the Organic Geochemistry Section of the GFZ German Research Centre for Geosciences (Helmholtz Center Potsdam).The group is co-sponsored by the Helmholtz Association of German Research Centers and the Technical University of Berlin (TU Berlin). Several data-exchange agreements with industry partners provide access to seismic reflection and well data.

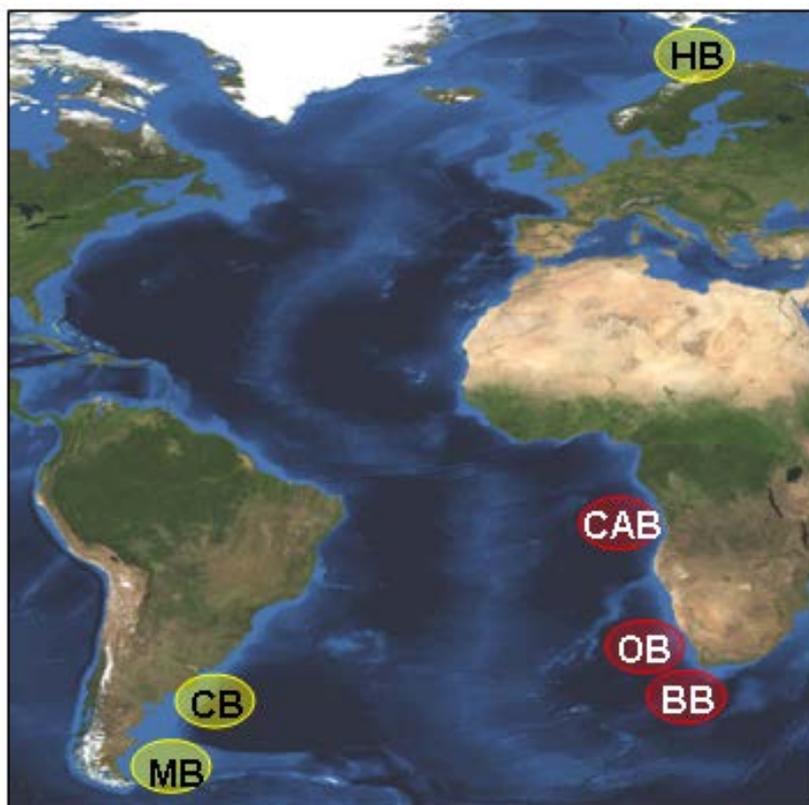
Our study aims at a comprehensive understanding of the driving mechanisms of hydrocarbon seepage and thermogenic-gas fluxes by means of process-oriented models, both at basin and super-regional scales. Reconstruction of the volumes and rates of thermally-generated methane emissions to the hydrosphere and atmosphere should provide insights on the possible feedback between this process and global palaeo- climate. Our Results complement previous studies developed at the GFZ's Organic Geochemistry section and are instrumental in GFZ's larger research initiative “Methane on the Move” (MoM) , which deals with a global assessment of the fate of thermogenic and biogenic methane in marine and terrestrial systems over geologic time a planetary scale.

The study is structured into a series of projects carried out on several of natural laboratories:

(1) THE ARGENTINEAN CONTINENTAL MARGIN:

The Colorado and the Malvinas basins are two of the sedimentary basins developed off-shore Argentina's rifted margin, which are separated by a series of basement ridges oriented ENE-WSW and ESE-WNW (fig.1). The Colorado basin is an E-W trending graben developed perpendicular to the margin with an area of about 130000 km². Its eastern boundary is a basement high parallel to the margin which separates the basin from the deep-oceanic Argentine Basin. Three main post-rift depocenters have been identified, the deepest one contains up to 15 km of sediments, from which about 7km would be Albian - Maastrichtian. The Malvinas basin is located between Tierra del Fuego and the Malvinas islands, with a NNW-SSE elongated shape (350 x 150 km) and a sedimentary filling ranging from 2 to 8 km. The basin is developed entirely within a wide continental shelf and is surrounded by Paleozoic pre-rift terrains, except to the south where it ends abruptly against the Burdwood Bank and the north Scotia Ridge (Galeazzi, 1996; Yrigoyen, 1989).

Figure 1. Location map of the basins currently being studied. (yellow circles) and study areas from previous works. (MB: Malvinas Basin, CB: Colorado Basin, HB: Hammerfest Basin, CAB: Congo-Angola Basin, OB: Orange Basin, BB: (Galeazzi, 1996; Yrigoyen, 1989). Bredasdorp Basin)



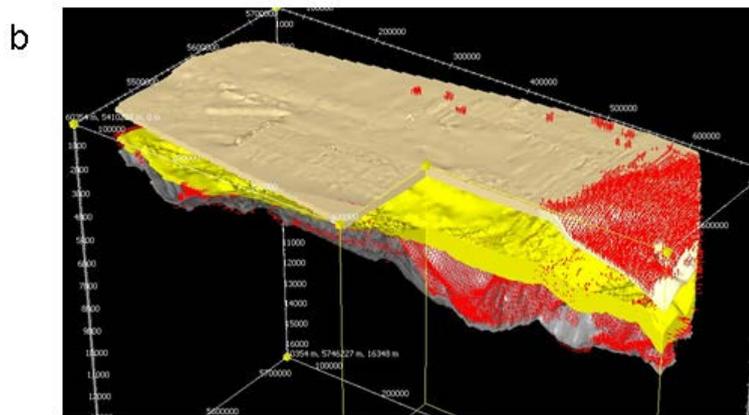
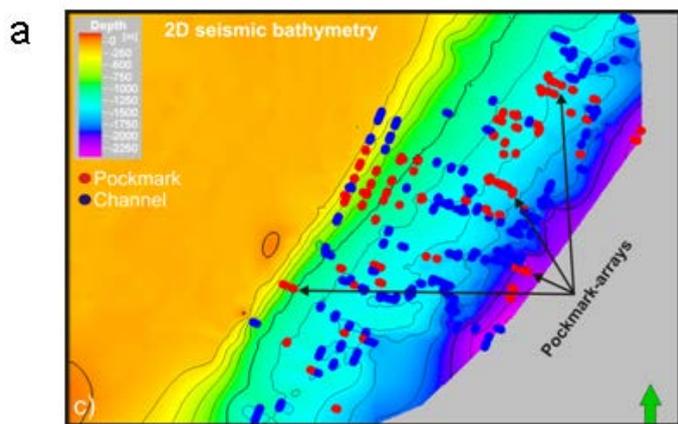


Figure 2. (a) Distribution of present-day gas chimneys and seabed pockmarks on the slope of the Colorado Basin. (b) 3D model of migration paths calibrated to the observed leakage features (Lögering et al. submitted to *Tectonophysics*)

Interestingly enough, this part of the Argentinean margin has been shaped by the interaction between South America, Antarctica and Scotia plates. The conjugated basins of the Colorado and Malvinas are thought to be the South African Orange and the Bredasdorp basins, respectively (Lawver et al., 1998; Unternehr et al., 1988). Oil and gas recovered from early Cretaceous intervals and minor oil shows from Paleogene and Miocene sections in the Malvinas basin (Galeazzi, 1998) as well as recovered oil/gas samples and rock-extracted bitumen in a few exploration wells in the Colorado basin indicate the existence of favourable conditions to the deposition and thermal maturation of source rocks, as well as the existence of petroleum systems in both basins (Katz and Mello, 2000; Szatmari, 2000; Vayssaire et al., 2007).

The first phase of these projects consists on the reconstruction of the post-rift tectono-stratigraphic evolution of both basins, understanding the possible structural or stratigraphic control on leakage events. These tasks involve seismo-stratigraphic interpretation and detailed mapping of past and present-day of gas escape or sequestration features (fig 2a).

The second phase focuses on the quantification of the thermogenic emissions through time, which is achieved through high-resolution 3D petroleum system modelling (fig 2b). Resulting Map-based models of drainage areas and closures are then calibrated with the mapped expressions of leakage. In addition, a sampling campaign was recently carried out to the immature onshore equivalents of the main source rock intervals for further geochemical analysis.

(2) THE SOUTHWESTERN BARENTS SEA, HAMMERFEST BASIN:

This is a frontier area for fossil resources exploration and an excellent setting for scientific research due to the complex environment and the various interactions among the rift, the continent, the ice, and liquid and gas hydrocarbons. The juxtaposition of the North Atlantic volcanic rifted margin with the distinct borderland of the Barents Sea makes for an unusual Mesozoic tectono-sedimentary history (fig.1). In addition, petroleum systems in the region are highly sensitive to thermal and tectonic changes, and these systems have been strongly influenced by the extraordinary Pleistocene glacial activity. It is widely accepted that uplift and erosion occurred over an area including Svalbard, the Barents Sea, Scandinavia and the British Isles. The Norwegian mainland experienced up to 1000 m of uplift and an excess of 3000 m of uplift occurred on the northern part of the Barents Shelf (see compilation of amount and timing in (Cavanagh et al., 2006)). In general, there are three main episodes of exhumation for the south-western Barents Sea: (1) Late Palaeocene uplift and related igneous activity (55–50 Ma) prior to the onset of crustal break-up and North Atlantic rifting; (2) Oligocene–Miocene inversion (30–15 Ma) and widespread occurrence of shallow marine conditions associated with passive margin development as rifting moved further north; (3) Late Pliocene–Pleistocene erosion (2.5–0 Ma) of the shelf area associated with ice sheet scouring and large submarine fan deposits west of the shelf break.

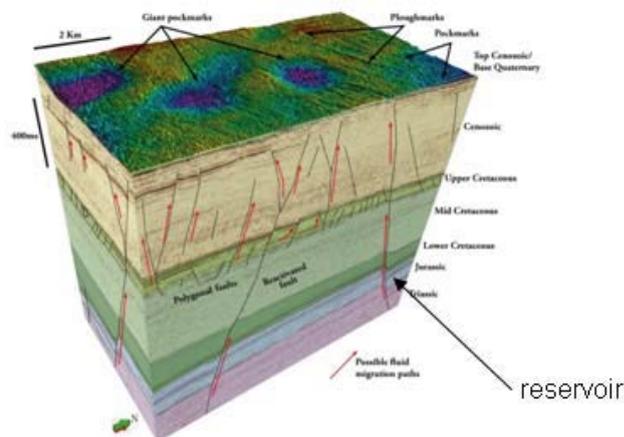


Figure 3. Large pockmarks (about 2 km diameter) identified at the top of the Cenozoic unconformity in the Hammerfest Basin (Barents Sea) (Ostanin et al. in preparation)

The aim of this project is to elucidate the effects of tectonic uplift, glacial loading, and post-glacial rebound and erosion, on the timing and extent of hydrocarbon gas sequestration in hydrates and their possible dissociation during the inter-glacials of the Quaternary Ice Age. Previous 2D calibrated models indicate that ice loading and removal during glacial and interglacial events has a profound influence on the hydrocarbon accumulations and a significant present-day thermal disequilibrium in the Hammerfest Basin results from Late Cenozoic exhumation (Cavanagh et al., 2006).

Extrapolation of Weichselian ice sheet oscillations indicates that about forty of these cycles would have taken place over the last 1 Ma. Preliminary results from this project indicate that such fluctuations provide a mechanism for the (i) episodic discharge of large quantities of thermogenic methane from the deep petroleum system, (ii) sequestration of this gas as clathrate, (iii) subsequent hydrate decay and sudden release of important volumes of methane to the seafloor right after the Last Glacial Maximum (Ostanin et al., 2011; Rodrigues et al., 2011) (fig 3).

(3) SUPER-REGIONAL INTEGRATION OF THE SOUTH ATLANTIC:

The aim of this project is to compile and integrate the results from our past and current work carried out in individual basins of the South Atlantic, in order to build a regional database containing the distribution of main post-rift depositional sequences and sequence boundaries, sedimentation rates and deposited volumes, timing of major tectonic pulses, source rocks distribution, heat flow, and recognised hydrocarbon leakage expressions. Particular interest is placed in elucidating the chronological correlation between regional tectonic/ erosional events, large slumps/ mass transport deposits, submarine currents/ sea-level fluctuations, and the identified

massive gas release episodes. This compilation will provide a super-regional perspective on the driving mechanisms of generation, migration, sequestration, and leakage of natural gas during the Cenozoic post-rift history of the South Atlantic. Due to the large-scale nature of the project, it is necessary the implementation or adaptation of new methodologies that allow to quality check, simplify, and reduce the amount of input data into the petroleum system model, while the outputs remain significant at the regional scale. The methodological approach will be validated by calibration with the 3D high-resolution models developed in each individual basin from the individual projects. The project is developed in closed collaboration with the SAMPLE initiative established by the German Science Foundation (DFG) already referenced in this newsletter (see AAPG – European Region Newsletter Vol 5, September 2010).

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Requests for this change are directed to Linda Burris at lburris@aapg.org.

Petroleum Systems of Romania

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INTRODUCTION

Romania is one of the most important hydrocarbon provinces of Eastern Central Europe (Fig. 1). Oil Production started in 1854 and since then 465 oil pools and 430 gas pools have been discovered. The cumulative oil production in 2007 was about 5 billion bbl, whereas the gas production exceeded 40 TCF.

Petroleum Geology of Romania is strongly linked to the development of the Carpathian Orogen (Fig. 1). The Carpathians are a fold and thrust belt formed by thick-skinned internal nappes assembled during the Cretaceous (i.e. Inner Carpathians) and by thin-skinned external nappes of Cretaceous to Miocene age (i.e. External Carpathians) (Fig. 2a,b). This latter is an accretionary wedge that overrides the relatively undeformed Eastern European plate margin.

Hydrocarbon exploration in Romania focuses on conventional and unconventional plays. Conventional plays are explored in the External Carpathians (1), the Getic Basin (2), the foreland of the Carpathians and the undeformed parts of the East European Margin (3), basins developed on top of the Inner Carpathians, such as the Pannonian Basin (4) and the Transylvanian Basin (5), and last, but not least the Black Sea (6). Unconventional plays are present in the East European margin (3, 3a) and Maramures (4a) (Fig. 1). Each of these tectonic units typically contains several petroleum systems, which will not be addressed in detail here. Instead, emphasis will be given to the status of exploration and remaining exploration potential.

Exploration in the past typically consisted in drilling relatively shallow (2-3 km deep) structural closures, based on 2D seismic data, but often without seismic control. New 3D seismic surveys will likely shed lights on smaller accumulations near major fields. On the other hand, deep structural and stratigraphic plays were not explored systematically. Major breakthrough

are expected with the use of more advanced acquisition, processing and interpretation technologies including long-offset seismic, AVO, etc.

THE CARPATHIANS AND ITS FORELAND

The External Carpathians are thin-skinned nappes built by Cretaceous to Miocene sediments, which were thrust over the undeformed Eastern European margin and Moesia during the Mid Miocene (Fig. 2a,b). Exploration targeted mostly the external nappes, where Paleogene and Miocene source rocks represented by paper-shales (dysodites) and bituminous silicolites (menillites) provide charge for Paleogene to Pliocene sandstone reservoirs in structural closures, mostly faulted anticlines.

In the Carpathians and its foreland often the rule is mixing of black and cracked oils, many times with different isotopic composition, which suggest complex maturation and migration history. Cretaceous source rocks are present in the internal nappes, but their effectiveness is not known.

Exploration targeted relatively shallow traps in the outer nappes with more than 50 oil and a few gas fields discovered (Fig. 1). Current exploration continues to look for opportunities in the shallow section, but also considers going deeper, where potentially large gas structures exist as suggested by long-offset 2D seismic lines and structural balancing. One key aspect of the exploration is to understand the effect of the Pliocene out-of-sequence deformation on the petroleum systems and the trap integrity.

The Miocene foreland of the Carpathians hosts several oil and gas fields typically represented by tilted fault blocks on the foreland plate (Fig. 2a). The Middle Miocene deep-marine shales buried deep in the internal foredeep charges shallow-marine sandstones on the foreland. Most hydrocarbons are thermogenic, but local biogenic sources are present as well.

The Miocene foreland of the Southern Carpathians includes the Getic "Depression" (Fig. 1). This latter is a Paleogene to Early Miocene right-lateral pull-apart basin (i.e. the Getic Basin) formed at the sheared contact between the Carpathians and Moesia and inverted during the Mid Miocene (Fig. 2b). The petroleum system is similar to the External Carpathians. The deep potential of this inverted basin lay in understanding the distribution of extensional rollovers with Lower Miocene and older sandstone reservoirs locally sealed by salt.

THE EAST EUROPEAN MARGIN

In Romania, the East European Margin comprises different tectonic units (locally known as the Moldavian Platform, Scythian Platform, North Dobrogea Orogen, and the Moesian Platform, Fig. 1) delimited by crustal-scale fault zones. These tectonic units were involved in Paleozoic and Triassic compressional deformations, Permian-Triassic and Jurassic extension, and weakly affected by the closure of the Alpine Tethys (Fig. 2a). In general, the sedimentary succession is formed by tectonic megasequences delimited by regional unconformities: Paleozoic, Permian-Triassic, Jurassic-Cretaceous and Miocene-Pliocene. Reservoirs may be found in all of these sequences, but the most effective are Triassic and Lower Cretaceous limestones, and Middle Jurassic and Miocene sandstones.

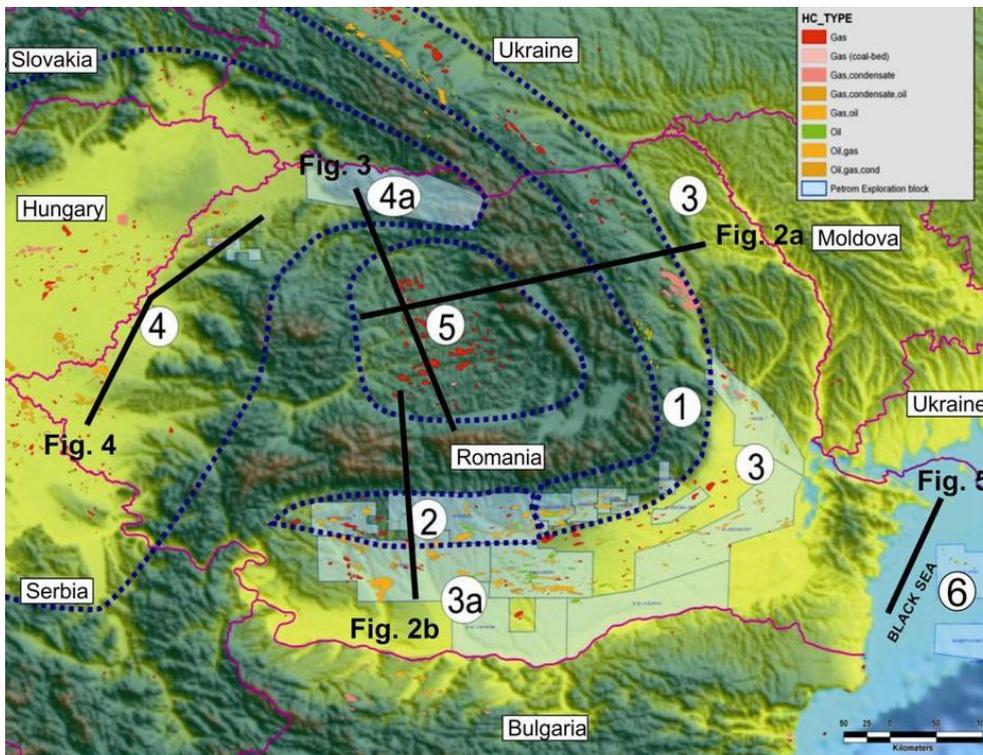


Figure 1. Map of Romania and neighboring countries. The dashed blue line indicates the explored areas. Annotations: External Carpathians (1), Getic Depression (2), undeformed part of the East European margin (3) including the Moesian platform (3a), the Pannonian Basin (4) and its sub-basin in Maramures (4a), the Transylvanian Basin (5), and the Western Black Sea (6). Black lines show the location of regional sections presented in Figs. 2-5.

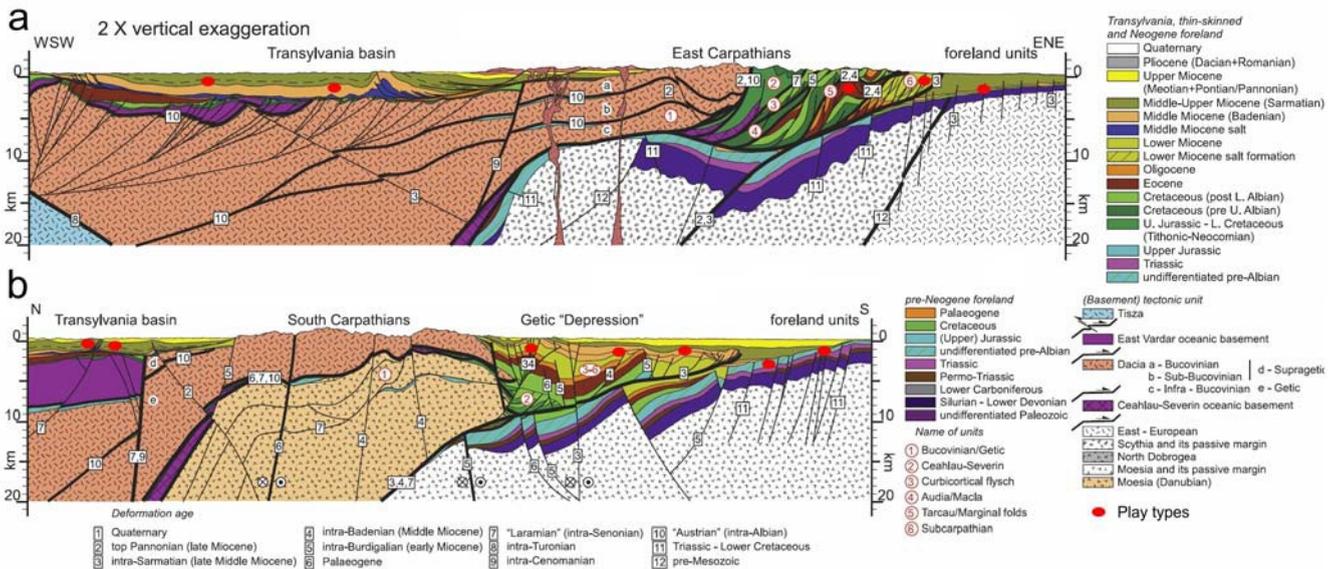


Figure 2. Regional cross-sections of the Carpathians and its foreland, and the Transylvanian Basin adapted from Maţenco et al. (2010). Note the differences in scale and structural style between the External Carpathians (a) and the Getic Depression (b). Location is shown on Fig. 1.

Effective source rocks are located in the Silurian, Devonian, Dogger, and Middle Miocene.

Exploration in the past targeted tilted fault blocks and various stratigraphic traps (toplaps, onlaps, reefs, incised channels). Likely, several more, but relatively small traps of these plays remain unexplored, but will be identified with 3D seismic surveys.

The tilted fault block play of Moesia, in the reach of deep drilling, is present under the outer nappes of the Carpathians (Fig. 2b). This has been identified on regional long-offset 2D seismic surveys recently shot by OMV Petrom and will be explored in the near future.

Two new plays may also emerge, as follows: 1) the unconventional shale gas play and 2) subtle, but potentially large and deep traps related to the Cimmerian folds. Successful exploration of the Paleozoic will have to address the consequence of the large-scale Hercynian exhumation present on certain areas.

THE TRANSYLVANIAN BASIN

The Transylvanian Basin is a biogenic gas province. The biogenic gas is sourced from deep-marine Middle Miocene shales and is stored in multi-

storey turbidite reservoirs in structural traps, frequently salt-cored folds (Fig. 2a-b, 3).

Exploration started more than 100 years ago and about 30 TCF of gas has been produced. Limited exploration potential is left in structural closures. One such area could be the eastern margin of the basin that is covered by back-arc volcanics (Fig. 2a). In addition, stratigraphic traps, mapped with 3D seismic and AVO will likely shed light on more accumulations. Most prospective areas are the basin floor fans in the central parts of the basin, and slope channels and fans in the northern and eastern part of the basin. Thin-bedded reservoirs in the western part of the basin could add resources as well.

Another, however not yet proven, petroleum system may be present, located deeper (sub-salt) in the basin. The only indication of this is a deep well that found in Jurassic dolomites in the basement of the basin. The source of this oil is not known. The effectiveness of the deep petroleum system is questionable, because of the lack of thermogenic components of the gas in the post-salt section, but above the Late Cretaceous grabens (Fig. 3).

THE PANNONIAN BASIN

The Pannonian Basin is a Miocene extensional back-arc basin system formed on top of the Inner Carpathians and their tectonic equivalents (Fig. 4). The petroleum system is represented by Miocene oil-prone lacustrine shales, which sourced altered basement rocks, shallow-marine syn-rift reservoirs, and Upper Miocene (Pannonian) sands.

Only, the easternmost shallow margin of the Pannonian Basin extends to Romania, where successful exploration has been conducted for many years (Fig. 1). Most discoveries are in structural closures such as tilted fault blocks or drape folds over basement highs.

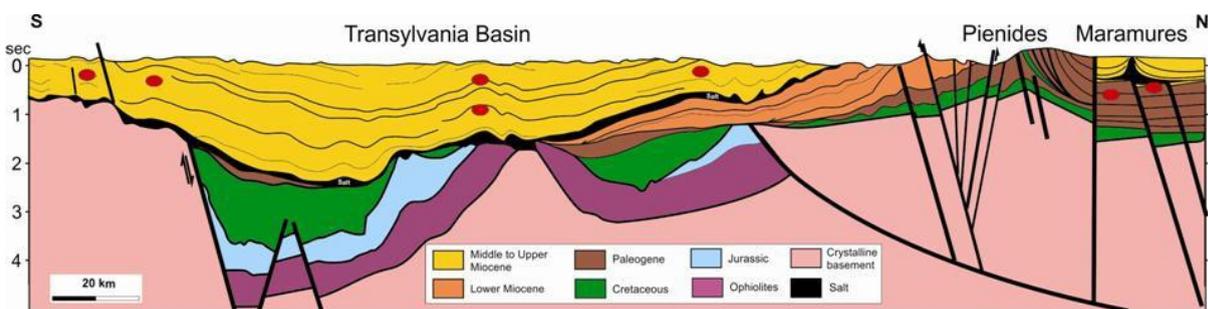


Figure 3. Regional cross-section from Marmureş to Transylvania Basin adapted from Krézsek and Bally (2006). The Mid Miocene salt is in black. The red dots suggest the main play types.

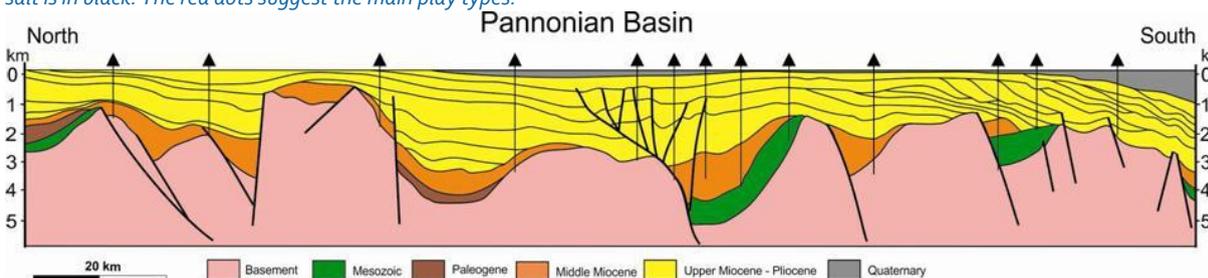


Figure 4. Regional cross-section of the Romanian side of the Pannonian Basin redrawn based on Răbăgia (2009). Location is on Fig. 1.

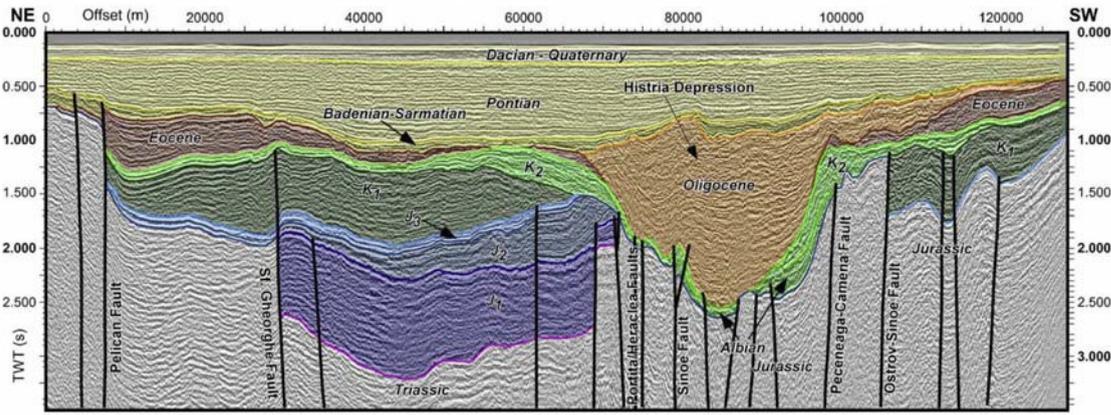


Figure 5. Regional seismic section of the Western Black Sea adapted from Dinu et al. (2005). Location see on Fig. 1.

Stratigraphic plays drilled in the last few years in the Hungarian part of the basin using AVO attributes have not been tested yet. These are Upper Miocene (Pannonian) turbidites that onlap basement highs. However, the exploration risks on the Romanian part are higher, because of the relatively thin and shallow sedimentary section, the late tilt of the basin margins, and the presence of volcanic gases in some areas. The tight gas play currently explored in the Hungarian part of the basin most likely extends into Romania as well.

MARAMUREȘ

Maramureș is part of the Pannonian Basin (Fig. 1). However, its petroleum system differs from the Pannonian Basin, because the basement is formed by a thrust and fold belt of Oligocene to Early Miocene in age, known as the Pienides (Fig. 3). A working petroleum system is indicated by several oil seeps and small accumulations in Paleogene reservoirs, which are sourced from Oligocene paper-shales.

The sub-salt play that works in Ukraine just across the border is yet to be proven in the Romanian side. Similar play elements are present in Romania, in western Maramureș.

A new play that may emerge in Maramureș is the shale oil play. Reasonable quality Oligocene source rocks are located in the oil generation window. Most of these shales are conveniently situated at shallow-depths due to the Pliocene uplift and exhumation of the Carpathians.

THE BLACK SEA

The Western Black Sea Basin is the Cretaceous back-arc of the Pontides. The basin suffered several phases of strike-slip deformation and inversion during the Paleogene. The Mid Miocene (Badenian-Sarmatian) is characterized by low amounts of subsidence with carbonate platforms and intervening deeps. This was followed by a large-scale progradation of the clinoforms during the Meotian – Pliocene (Fig. 5).

At least two different petroleum systems are recognized on the present day shelf: Mesozoic (thermogenic) and Pontian (biogenic and thermogenic?). The Mesozoic system consists of an oil-rich source, likely Early Cretaceous in age, which charge Mesozoic and Eocene limestones. This system is likely overmature in the deep offshore.

The Pontian petroleum system is formed by dry-gas found in deltaic sands on clinoform topsets. Some of this gas is biogenic sourced by Pontian shales, but thermogenic components are present likely charged by the Oligocene. Current exploration continues in the shallow section, but tries to open new plays represented by slope and basin floor fans located further offshore in the basin.

CONCLUSION

Significant exploration potential is left in Romania. The general trend is going deeper while applying state-of-the-art exploration methods. Among others, these include 3D seismic surveys over traditionally explored regions, regional long-offset 2D lines for structurally complex and deep leads, AVO analysis of

shallow targets and 2D/3D structural balancing. The potential reward could be significant discoveries (likely gas) in the coming years in the Carpathians and the offshore of the Black Sea.

ACKNOWLEDGEMENT

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AAPG International Conference & Exhibition

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Technical Program Preview

Look for the Technical Program & Registration Announcement arriving in mailboxes soon!



Register by 3 August for MAXIMUM savings!

Follow AAPG to Milan, Italy, for the 2011 International Conference & Exhibition (ICE), 23-26 October, where, in the spirit of Leonardo Da Vinci, we will discuss the latest advances in Petroleum Geosciences.

Leonardo da Vinci, whose geological and paleontological observations and theories anticipated many modern principles of geology, worked in Milan for many years. It is therefore fitting that the technical programme for the AAPG 2011 ICE takes inspiration from Da Vinci's genius to look at innovation in petroleum geosciences. Also, Milan is located at the foot of the Alps, where spectacular carbonate outcrops provide analogues for many of the world's carbonate reservoirs.

A special topic on exploration & production in the Alpine-Himalaya Fold Belt and Foreland Basins, discussed at the foot of the mountain chain from which the Alpine system drew its name, contributes to making this conference a landmark event. With this inspiring background a technical program has been put together that will look at advances in all the hot topics of petroleum geology.

Technical Program Themes

Theme I: Carbonate Reservoirs — From Pores to Production Carbonate Giants of the World

- Carbonate Giants of the World
- From Outcrop to Reservoir I
- Global Carbonate Sequences and Fields
- From Outcrop to Reservoir II
- Global Carbonate Sequences and Fields: From Gas to Heavy Oil
- Global Carbonate Sequences and Fields: Middle East
- From Outcrop to Reservoir
- Global Carbonate Sequences and Fields - Microbial and Non-Marine Sequences
- Global Carbonate Sequences and Fields – Offshore Brazil
- Carbonate Reservoirs: Modeling the Heterogeneities
- Porosity in Carbonates: Challenging the Paradigms
- Global Carbonate Sequences and Fields - Middle East
- Carbonate Reservoirs: Modeling the Fluids, Diagenesis and Heterogeneities
- Global Carbonate Sequences and Fields

Theme II: Where Africa Meets Eurasia — Exploration & Production in the Alpine-Himalaya Fold Belt and Foreland Basins

- Regional Setting Paleogeography & Tectonics
- Europe, North Africa and Balkans I
- Europe, North Africa and Balkans II
- Middle East and Central Asia I
- Regional Setting Paleogeography and Tectonics
- Middle East and Central Asia

- South Asia
- Europe, North Africa and Balkans
- Middle East and Central Asia
- South Asia I
- South Asia II

Theme III: Rifts and Deltas

- Deltas I
- Rifts and Rifted Margins
- East Africa Rifts
- Eastern Mediterranean
- Deltas II
- Atlantic Margins
- Rifts and Rifted Margins

Theme IV: Advances in Integrated Geoscience Applications

- Play and Prospect Assessment I
- Play and Prospect Assessment II
- Reservoir Modeling
- Play and Prospect Assessment
- Petroleum Systems Modeling
- Petroleum Systems Modeling I
- Petroleum Systems Modeling II
- Reservoirs Modeling and Management

Theme V: Reservoir Management — From Outcrops to Assets

- Deep Water I
- Deep Water II

- Fluvial, Coastal and Shallow Marine Reservoirs
- Carbonates and Fractured Reservoirs
- Deepwater Reservoirs
- Reservoir Management: From Outcrop to Assets
- Fluvial, Coastal and Shallow Marine Reservoirs
- Reservoir Characterization from Outcrops to Drilling

Theme VI: Dynamic World of “Uncooperative Reservoirs” — The Geoscience of Unconventional Resources

- CBM: A Global Perspective
- Shale Dynamics: Rock Properties to Hydrocarbon Generation
- Tight Gas Sandstones in Unconventional Plays
- Rock Properties of Unconventional Reservoirs
- The World of Uncooperative Reservoirs: CBM, Tight Gas Sands, and Shales
- Facies to Nano Porosity
- Shale Oil & Gas Case Studies: The Toolbox Assets I
- Shale Oil & Gas Case Studies: The Toolbox Assets II
- Shale Oil & Gas Case Studies: The Toolbox Assets

Theme VII: Leading-Edge Technologies and the Future of E&P

- E&P Challenges
- Carbon Capture and Sequestration
- Geophysical Techniques
- Petroleum Systems
- Geoscience Tools and Techniques
- Petroleum Systems

Field Trips

Field trips covering the topics listed below will allow you to see some of the most beautiful places in Italy.

1. The Po Valley Triassic/Jurassic Petroleum Systems and Their Dolomitic Reservoirs
2. The Central Adriatic Foredeep from Upper Miocene to Pleistocene: an Example of Basin Tectonic-Sedimentary Reconstruction by Means of Surface and Subsurface Tools
3. Triassic Platform and Basinal Bodies of the Dolomites as Outcrop Analogues for Hydrocarbon Carbonate Systems
4. Walking Along a Crustal Profile Across the Sicily Fold and Thrust Belt
5. Late- to Post-Variscan, Large Scale “Hydrothermal” Dolomitization in the Iglesias Area, Southwestern Sardinia: Geologic/Geodynamic Setting, Fluid Flow and Porosity Evolution
6. Foredeep Turbidites of the Miocene Marnoso-arenacea Formation (Northern Apennines, Italy)
7. Fractured Carbonate Reservoirs: the Integration of Facies and Structural Characteristics to Understand Reservoir Performance
8. Travertines of Central Southern Italy: Textures and Facies Organization

Short Courses

Stay on top of the latest information with a short course.

1. The Application of Geomechanics in International Shale Plays (AAPG)
2. Fracture and Geomechanical Characterization of Hydrocarbon Reservoirs: Principles and Applications with Middle Eastern Perspective (AAPG)
3. Sequence Stratigraphy for Graduate Students (SEPM)
4. Phanerozoic Carbonate Systems: Processes and Case Studies (SEPM)
5. Risk and Uncertainty for Contemporary Prospect Evaluations
6. Non-Seismic Detection of Hydrocarbons: Assumptions, Methods, and Exploration Case Histories
7. Fault Seal Analysis
8. Fundamentals of Carbon Capture and Sequestration State of the Technologies, Economics, and Future Outlook (DEG)
9. Core Workshop: The Role and Importance of Corporate Labs in Petroleum Exploration and Production Activities

See the latest in technologies, products and services for the global E&P industry in the Exhibition Hall. Here you'll find:

- Icebreaker Reception, the exhibition's grand opening
- Morning and afternoon coffee breaks
- International Pavilion, where countries showcase their oil and gas exploration and production opportunities
- AAPG Center, for information on AAPG's activities
- *The Davinci Exhibit of Machines*, a fascinating display of models, based on the Da Vinci codes and on historical documents using the materials of Leonardo's time: wood, metal, ropes and fabrics.



www.AAPG.org/Milan2011

Registration now open for the AAPG 2011 International Conference & Exhibition in Milan

Early-bird discounts available through 3 August

Tulsa, OK, June 1, 2011: Registration is now open for the AAPG 2011 International Conference & Exhibition (ICE), to be held 23-26 October 2011 in Milan, Italy. Those who register on or before 3 August can save hundreds off the on-site registration fees.

In addition to the opportunity to network with an international mix of the brightest minds in geosciences, attendees will have the opportunity to participate in these events:

- The Opening Ceremony and Icebreaker Reception
- Special forums and sessions including:
 - Plenary Session: Following Da Vinci's Footsteps to Future Energy Resources: Innovations from Outcrops to Assets
 - Business Forum: The Business of Energy — Keys to Profitability
 - Special Lecturer: Professor Emiliano Mutti on Turbidites
 - Technology Forum: New Technology Directions in Exploration and Production
 - DPA Forum: Professional Issues for Professional Geologists
- A comprehensive Technical Program featuring more than 500+ oral and poster presentations
- An Exhibition Hall showcasing new technologies, services and products
- The opportunity to see the Da Vinci Exhibit of Machines on display in the Exhibition Hall

Attendees may also choose to participate in one of 8 Field Trips or 9 Short Courses (including a core workshop for students).

Several opportunities are available for student and young professionals' participation at ICE.

- Young Professionals Meet & Greet — get an insider's perspective of the conference and network with industry professionals.
- Student Reception — Food, fun and networking AAPG style.
- A scholarship opportunity for Field Trip 3 and student rates for Short Courses 1, 2, 3 and 9.

The theme for ICE is *Following Da Vinci's Footsteps to Future Energy Resources: Innovations from Outcrops to Assets* and the organizing committee is led by Honorary Chair Luca Bertelli, General Chair Jonathan Craig, Co-General Vice Chairs Massimo Antonelli and Francesco Italiano, all with eni.

Sponsorship Co-Chairs are [David Cook](#), ExxonMobil (retired) and [Vlasta Dvorakova](#), President Elect, European Region AAPG/Czech Geological Survey.

There are still opportunities available to companies wishing to participate either as a sponsor or exhibitor. To exhibit contact Exhibition Sales Representative Mike Taylor, mtaylor@aapg.org. To sponsor contact Conventions Marketing Manager Julie Simmons, jsimmons@aapg.org.

For more information visit www.AAPG.org/Milan2011 and follow us on these social media sites:

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Student/YP Activities at the AAPG ICE 2011 Milan

Sonya Punch (AAPG YP)

Milan will host the 2011 International Convention and Exhibition (ICE) on October 23-28th. The tone of the convention will be set by the opening ceremony and featured talk about one of the greatest minds of all times, Leonardo Da Vinci. Without a doubt, the Milan ICE convention is not to be missed.

The student/YP programme seeks to provide several learning, networking, volunteering and mentoring opportunities to all participants and will be kicked off by the YP Meet and Greet on Sunday before the opening ceremony. Young professionals, students and industry experts are grouped to meet new friends, greet old friends, take a tour and attend the ceremony. Sign up to participate in the YP Meet and Greet during registration. Join the Challenge Competition to win monetary prizes.

On Monday there will be a dedicated student poster session where students from local and international universities compete for the prestigious AAPG endowed trophies and awards. With over 30 posters and talks, the competition will be fierce. Attend the Exxon sponsored Student Reception on Monday 24th at the Melia Hotel for a chance to meet your programme sponsors and cheer on the winners of the competition. All students and professors are cordially invited to attend.

Missed the abstract deadline? Don't worry. There are several ways to get involved and benefit from the conference. Shell has sponsored scholarships to a carbonate field trip. Exxon, among several other companies, have sponsored student involvement in selected technical short courses and field trips. ENI will host students at their Core Lab Workshop and in addition to this, will sponsor 125 students to attend the convention. View the website for further details on discounted courses and field trips.

Yet another way to become involved is by volunteering to work at the convention. It provides countless networking opportunities while being paid for every 4-6 hours worked. Opportunities exist within technical sessions, at the registration desk, at the opening ceremony and more.

Interested? For more information visit <http://www.aapg.org/milan2011/StudentActivities.cfm>

Get involved, meet new friends, bring business cards and have fun! Ci vediamo a Milano! See you in Milan!



The Polar Petroleum Potential Conference & Exhibition

Conference: 30th August - 2nd September

Exhibition: 30th August - 1st September

World Trade and Convention Centre Halifax, Nova Scotia, Canada

MESSAGE FROM THE CONFERENCE ORGANISERS

On behalf of the American Association of Petroleum Geologists, we cordially invite you to attend 3P Arctic: The Polar Petroleum Potential Conference & Exhibition, to be held in Halifax, Nova Scotia (Canada) 30th August – 2nd September 2011. This is the second 3P Conference & Exhibition specifically focused on the petroleum geology and exploration of the Circum-Arctic basins, located within Russian, Norwegian, Greenlandic, Canadian and US Alaskan onshore and offshore Arctic territories. The first 3P event in Moscow in 2009, made a fabulous start to the advancement of Arctic exploration understanding. The meeting attracted great interest from industry and academia, who by sharing modern data and up-to-date geoscientific and exploration knowledge, prepared industry for taking on the economic and technological challenges in this demanding icy region.

Attendees were drawn from many Arctic and adjacent countries, and the universal language was science. The open sharing of knowledge and understanding, networking, and development of friendships was the foundation of a highly successful event. The upcoming 3P in Halifax will build on this success.

3P Arctic 2011 will be held at the Halifax World Trade and Convention Centre (WTCC), an exhibition and conference facility in downtown Halifax. Our field trips, oral sessions, and poster presentations will all be focused on Arctic geoscience and engineering technologies. In addition to the technical program featuring more than 150 oral and poster presentations, there will be an exhibition dedicated to companies working the Arctic. Join leading Arctic research scientists and explorationists for the unique 3P Arctic event in Halifax.

Erik Lundin
3P General Vice-Chair

Sergey S. Drachev
3P General Chair

TECHNICAL COMMITTEE General Co-Chair: *Sergey Drachev, Exxon Mobil* General Vice-Chair: *Erik Lundin, Statoil* Technical Program Co-Chair: *David Houseknecht, U.S. Geological Survey* Technical Program Co-Chair: *Gordon Oakey, Geological Survey of Canada* Sponsorship Chair: *Steve Phelps, Shell* Technical Program Advisor: *Pinar Yilmaz, ExxonMobil* Past General Chair: *John Hogg, MGM Energy Corp.*

REGISTER BY 28th JULY AND SAVE!

Registration for the definitive petroleum geosciences event for the Arctic is now open. Join industry experts in Halifax, Nova Scotia, Canada, to discuss the petroleum geology and exploration of the Circum-Arctic basins located within Russian, Norwegian, Greenlandic, Canadian and U.S. Alaskan onshore and offshore Arctic territories. Early-bird pricing ends 28th July 2011 — [register now](#) for savings up to US \$100. The 3P Arctic conference program is now available online.

Highlights of 3P Arctic 2011 include:

- Exhibition Hall with networking opportunities
- More than 100 quality technical papers and 50 posters
- 3 field trips

And don't miss the Plenary Session covering Scientific Data Requirements for Defining Canada's Extended Continental Shelf in the Arctic Ocean, speaker Jacob Verhoeve; Developing Canada's Arctic Petroleum Potential - Management and Policy Context, speaker Giles Morrell; Tectonics of the Circum-Arctic: What We Know and What is Yet to be Learned, speakers Victoria Pease and Sergey Drachev

FEEDBACK FROM 3P ARCTIC 2009

"Very good opportunity to meet researchers in Arctic/Polar geological problems related to petroleum exploration and development." — Conoco Phillips

"We had a good show, put us down for Halifax." — ION "Many giant

petroleum fields lie undiscovered in the region and 3P Arctic has become the primary forum for presenting and discussing the new data and concepts which will point the way to these much needed resources." — Ashton Embry, Arctic Geologist



5 - 6

September, 2011

SCIENTIFIC GEOLOGICAL CONFERENCE

ATYRAU GEO

TO THE 100TH ANNIVERSARY OF THE PRODUCTION
OF THE FIRST OIL IN KAZAKHSTAN

The **Association of Petroleum Geologists of Kazakhstan/APGK** (Atyrau city) together with the Kazakh Institute of Oil and Gas (KING) holds the first International Scientific Geological Conference "AtyrauGeo-2011" dedicated to the 100th anniversary of the production of the first oil in Kazakhstan on September 5-6th, 2011. The Conference is held with support of the American Association of Petroleum Geologists (AAPG), RK Ministry of Oil and Gas, RK Committee of Geology and Subsurface Use (MINT), "KazEnergy" Association, National companies, E&P Kazmunaigas and Atyrau Regional Akimat. The given event is a part of the anniversary festivities which are scheduled to hold for September 3-4, 2011 in the city of Atyrau by «KazMunaygas Exploration & Production» company. The Conference will be held in one of the best hotels of the city "Renaissance Hotel Atyrau" located in the heart of the city.

Themes of the sessions of conference "AtyrauGeo-2011":

I-session – Specifics of structure of the pre-salt sequence in the south of the Precaspian basin.

II-session - New directions for exploration of oil and gas deposits in the post-salt sequence, reviving "the old Emba spirits".

III-session – Improvement of technique of search/exploration for new oil and gas fields.

Full information on the conference you may find on the website www.ongk.kz or by request at info@ongk.kz

Organizing Committee for the Conference "AtyrauGeo-2011"

Address: Republic of Kazakhstan, 060011 Atyrau, Aiteke bi street, 43 A.

Contact details: info@ongk.kz, tel: 7 (7122) 97 -08-15, fax: 27-13-69.

MAPG-AAPG 2nd International Convention, Conference and Exhibition

Marrakech 5-7 October 2011

EXTENDED
ABSTRACT SUBMISSION
DEADLINE : 17 JULY

Northwest Africa Building on Past Success to Unlock Future Potential



AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS



MOROCCAN ASSOCIATION OF PETROLEUM GEOLOGISTS

MAPG – AAPG 2nd International Conference and Exhibition

held at the Palais des Congres at the Grand Mansour Eddahbi Hotel in Marrakech, Morocco

Call for Abstracts – Deadline: 17 JULY 2011

Following the successful first convention in 2007, the Morocco Association of Petroleum Geologists has teamed up with the American Association of Petroleum Geologists to present its 2nd International Convention, Conference and Exhibition.

Organising Committee

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Rainer Zuhlke, GeoResources

Exploration activity in Northwest Africa has gathered pace since the first convention, with acquisition of seismic data and exploration drilling taking place in both onshore and offshore areas. New exploration concepts have been developed as a result of which there have been some notable gas discoveries in Morocco and Mauritania, and exploration activity in this area continues apace.

The sedimentary basins of Northwest Africa are generally under-explored and further potential exists for both conventional and unconventional resources. This convention will cover a wide variety of themes covering, not only Northwest Africa hydrocarbon systems, but also the more global exploration challenges the extractive industry faces.

Join us in Marrakech and learn more about recent exploration activity, new plays and concepts, and the future potential of this fascinating area. The Organising Committee has developed a comprehensive and high

quality programme of oral and poster sessions together with an exciting selection of field trips to classic localities. Whether or not you are involved with the geology of Northwest Africa this convention is for you.

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Send abstracts via the website:

www.aapg.org/mapg2011/

UK Student Chapters: A Promising Future

Christophe Serié, Alanna Juerges

Following the first UK Student Chapter Leadership Meeting held in 2010, there was a significant growth in student activities with three new chapters, a number of joint activities, and an uptake in universities entering the Imperial Barrel Award program. With that in mind, and with support from the European Region, a second meeting was held on March 2-3, 2011 at the University of Manchester, England, where both student enthusiasm and involvement have highlighted a promising future for the Student Chapter Program in the UK.

Representing thirty percent of student chapters within the European Region, the UK benefits from well established and new energetic chapters, in addition to the significant support from the oil and gas industry as shown by an increasing investment in research programs and student sponsorship. Student chapters are actively involved within their respective universities organizing field trips, lecture series, and other events such as young professional evenings, photo contests, and community work. Furthermore, a number of initiatives have led to joint field trips throughout Europe (i.e. Isle of Skye field trip between the Aberdeen, Amsterdam, and Lisbon chapters; Wessex Basin field trip between Southampton and Montpellier chapters), as well as the first joint petroleum geology course between the Aberdeen and Bucharest chapters. The Imperial Barrel Award Program has also seen a significant growth and success to date with 4 UK teams participating in this year's European Final, and the University of Southampton representing the European Region and winning the Selley Cup (2nd place) at the IBA Finals in Houston, TX.

Participants of the 2011 Leadership Meeting included representatives from seven established chapters and one potential new chapter. An evening icebreaker dinner was followed by a full day of presentations on many aspects of AAPG. Topics covered include AAPG as a global organization, student membership, student chapter organization, the Imperial Barrel Award program, and presentations from the represented student chapters. This proved to be a very informative session generating new ideas and questions on how to run a successful student chapter, potential joint activities, and useful discussion on recurrent problems with regard to student chapter continuity and funding.

In the near future, our main objectives are to maintain the current number of active student chapters, whilst targeting potential new chapters (i.e. Liverpool, Portsmouth and Cardiff universities), and create stronger links between existing programs by forming regional groups (i.e. Northern, Central and Southern student chapter groups). The establishment of such groups will certainly facilitate additional joint activities and increase the

potential for funding. Moreover, established and active chapters could directly help newly formed or dormant chapters and enhance student chapter continuity.

We would like to finish by thanking all those that made the meeting a success, and hope you will continue to support our future efforts.



UK Student Chapter Program, showing active and potential new student chapters.



Participants of the UK Student Chapter Leadership Meeting 2011, University of Manchester, England.

Petroleum Geology in the Heart of Industry

Aberdeen Student Chapter training course 2011

Adam McArthur – President Aberdeen AAPG Student Chapter



Figure 1. Group picture at "The Fault", on the golf course at Stonehaven, which sits above the Highland Boundary Fault.

The Aberdeen Student Chapter was very proud to host its first ever petroleum geology training week. Four students from Bucharest University travelled to the UK on Saturday the 2nd of April 2011, to stay for nine days. On the course they were joined by six students from Aberdeen University's Petroleum Geology undergraduate degree programme. The course was entitled *Petroleum geology in the heart of industry* as we felt Aberdeen is at the heart of the North Sea petroleum geology industry. The course aimed to provide a sound understanding of petroleum geology, through a mixture seminars and exercises from industry experts, interspersed with visits to company offices and field trips to local areas of geological significance.

After the arrival of the Bucharest students they were treated to a guided tour of Aberdeen before the Icebreaker event that evening at the city's Ashvale restaurant. The course was designed to give students a taste of an MSc course in petroleum geology. Dr. Stuart Archer led a field trip to Stonehaven, south of Aberdeen to study clastic sedimentology and to use



Figure 2. Students were given a guided tour of the Baker Hughes wireline facility, where a live logging run was demonstrated.

the outcrops as an analogue for Triassic reservoirs in the North Sea. Stuart also delivered one day courses on the petroleum system and geological exploration for hydrocarbons, which included an advanced exercise, where students were tasked with identifying prospects in the North Sea. A trip to the Shell core store allowed students to examine a variety of strata in core and they tasked with interpreting the depositional system each core represented. A second field trip was led by Dr. Doug Boyd to the Ythan Estuary, north of Aberdeen, to examine modern depositional systems and use these as an analogue for a reservoir, which was followed by a quick exercise in how to develop the "Ythan reservoir". The final classes of the course were concerned with production geology and were delivered by Mike Shepherd. The third field trip of the course was to St. Cyrus to examine volcanic – sediment interactions, led by Dr. Nick Schofield. Here we considered the problems of drilling through volcanic provinces and examined possible intra-basaltic reservoirs as have been discovered west of Shetland. The final days of the course were spent on visits to the BP and Shell North Sea headquarters where the students gained an insight into working for a major oil company and a visit to the Baker Hughes wireline school to participate in a live logging run and learn about the various wireline tools available when drilling a well.

No AAPG course would be complete without social events and as well as brining the students to our campus bar, we had a social night where the students played 10 pin bowling and mini-golf; a young professionals evening, hosted by the Aberdeen AAPG Young Professionals group, where the students were able to talk freely to early career earth scientists and the course finished with a social event where the students were able to say their farewells. These social events are priceless in terms of networking events and letting the students get to know each other.

This course was sponsored by Dove Energy and Ithaca Energy. We would also like to thank AAPG Europe for funding towards this trip. Shell UK for providing prizes for the exercises and of course Stuart Archer, Doug Boyd, Mike Shepherd and Nick Schofield and all the other helpers and delegates for making this a fabulous course. We hope that this course can continue to attract support and can take place again next year with a wider audience.



Figure 3. Students examine the sediment – volcanic interactions at St. Cyrus.

Joint Excursion to the Wessex Basin, UK of AAPG Student Chapters TUD (Delft University of Technology) – RHUL (Royal Holloway, University of London)

Koen van Tooreenburg (President of the AAPG Student Chapter Delft)

(Very) early morning, Friday the 29th of April: sixteen MSc and PhD students gather at the faculty entrance for the Delft University AAPG Student Chapter's second annual excursion.

It is the first excursion to go abroad, to the Wessex Basin at the Jurassic south coast of the UK. Like the first annual excursion which was held together with the Ghent University AAPG Student Chapter, this fieldtrip is organized jointly with the one of Royal Holloway, University of London. The world renowned expert on the subject, Dr Ian West, will lead the excursion. The two mini-vans race through Belgium and part of France to get on the ferry from Dunkirk to Dover in time. The ferry crossing is a welcome pause from the long drive and the passengers find themselves confronted with the first major British cultural event: the Royal Wedding, broadcasted on every possible display in the ship. To break up the long drive from Dover to the hotel in Weymouth, the students visit the famous Stonehenge. After finally arriving in the county of Dorset, the Delft group meets the London delegation in a pub appropriately named 'the Rock'.

After the, for some people, overwhelming British continental breakfast, the group meets Ian at the famous Kimmeridge oil shales. This important North Sea source rock is often mentioned in lectures, but never seen in outcrop by most participants. Attempts to light the shale fail dismally due to the strong wind, but 'samples' find their way into the bags of some pyromaniacs. Ian also shows the participants one of the first production wells in the area, still producing oil to this day. The second stop is the most visited geological locality in Britain: Lulworth Cove. The exposure of folded Jurassic and Cretaceous strata is truly spectacular (see photo below). The last stop of the day is at the Bridport Sands, exposed as impressive vertical sandstone cliffs. This formation serves as the upper reservoir rock of BP's famous Wytch Farm oilfield with good porosity and permeability. In the evening hours, after an especially satiating dinner, Ian further elaborates on the Wessex Basin in an interesting lecture in the hotel. Subsequently, the London students are introduced to a very Dutch tradition: the celebration of Queen's Day!

On Sunday morning, the students visit their last stop at the Portland limestone, amongst other things famous for its cement and giant Ammonites. The group parts at the lighthouse for the long drive back home, looking back at an interesting and -above all- fun excursion.

We would like to thank Ian West for his excellent guidance during the trip and recommend anyone interested in the Wessex Basin geology to visit his website <http://www.soton.ac.uk/~imw/>. All participants of the excursion are thanked for their enthusiasm and conviviality and last but not least we want to thank the AAPG and all of our sponsors for their generous support of our excursion.

FROM OUR CHEERFUL COMPANIONS

We, the Royal Holloway group, were a rag-tag bunch of 7 PhD- and MSc students. Setting off at the much more civilised time of 3pm, allowing us enough time to celebrate the royal union/royal tedium, depending on opinion. We then headed to Weymouth. After meeting the eager and enthusiastic Delft chapter we proceeded to try and strengthen UK-Netherlands bonds with a trip to 'The Orange Cider Bar'. The cider didn't go down too well, but we all enjoyed getting to know each other. On Saturday we realised we had quite the action packed day, attempting to take in the entire Jurassic Coast! We packed in the sites and were omnisciently guided by the iconic Ian West, touring from source to reservoir, with plenty of ice-cream to moot. Naturally the evening proceeded behind schedule and descended rapidly into Queens Day celebrations. The following day we had a whistle stop tour of the Bill of Portland before waving farewell to our Dutch counterparts. We took the more leisurely journey back via the New Forest for an extended lunch and walk.

Myself and the rest of the RHUL Student Chapter would like to extend our warmest thanks to Nathalie and the Delft AAPG Chapter for first class organisation and for acquiring the funding from our sponsors. It was a unique experience being toured around ones own country by a member of another and we hope to return the experience!



Group photo of the Wessex excursion in late April in front of Stair Hole, Lulworth Cove, Dorset.

The website of the Delft AAPG Student Chapter provides more excursion photos under "Fotoalbum" as well as announcements on all our other activities. Please visit <http://AAPG.CiTG.tudelft.nl> and find out yourself.

IBA 2011- Successes for Southampton's team



Figure 1. AAPG IBA The Southampton team members (L-R) Nathan Payne, Louise Moorhead, William Symons, Peter Heath and Marcus Wiltshire

A team of five undergraduate MSci students studying at the School of Ocean and Earth Science (SOES), University of Southampton, have been awarded gold at the 2011 American Association of Petroleum Geologists (AAPG) European section of the Imperial Barrel Awards, held in March 2011 in Prague. Later in May 2011, the team came second at the global IBA final in Houston, Texas. Congratulations!

Twelve teams from around the world competed at the IBA finals, selected from 97 universities who initially entered their regional competitions. The SOES team came second behind the University of Texas at Austin, securing the Selley Cup and a \$10,000 prize for the University of Southampton, which will be used to further petroleum geosciences education.

Professor Tim Minshull, Head of the School of Ocean and Earth Science says: "Our students have worked exceptionally hard and I congratulate them on their achievement. This result, following strong performances in the European competition for the last 3 years, illustrates the strength of geoscience education at Southampton and how well prepared our graduates are for future employment in a global market."

The Southampton team focused on reviewing a 600 km² site in the Netherlands. Their presentation contained an assessment of the potential of the area for hydrocarbon exploration and production, considering issues such as economics and risk, and recommendations about potential development.

After winning the European competition, the team Advisor Sebastian Watt comments: "This is a fantastic achievement –several of the teams Southampton were competing against were Masters students specialising in Petroleum Geoscience. To gain first place against all these European universities demonstrates the outstanding quality of our students."

Reflecting on the experience, Geophysics student Louise Moorhead says: "The IBA is a fantastic learning experience with the opportunity to gain a real feel of the petroleum industry and to compete against some of the most talented students around the world. I would definitely recommend it to other students as it is a great way to see how the theory we have learnt is put into practice in oil and gas companies."

"It was good to see that the skills we have been taught throughout our degree at Southampton can be applied so readily into an industry-based scenario. It gave us all confidence that we will be competitive in the job market once we graduate this summer," says 4th Year MSci Geology student Marcus Wiltshire.



Figure 3. The silver winners at the IBA in Houston^o



Figure 4. Silver Medal of the AAPG's Global IBA Program

Please watch also the inspiring movie about the European Region Competition: <http://europe.aapg.org/imperial-barrel-awards>

AND ... don't miss your chance at the next year's IBA competition held on the 16th and 17th of March 2012 in Prague!

Further information can be found here: <http://www.aapg.org/iba/>



Figure 2. The gold winners at the IBA in Prague, together with David Cook, the AAPG European Region President

CALENDAR OF EVENTS

						1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
Mai										Aberdeen Oil Finders Lund (Aberdeen, UK)											Aberdeen Education Week (Aberdeen, UK)																
June			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30					
July				1	2	3	4	5	6	7	8	2nd Geosciences Student Conference (Krakow, POLAND)				13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31			
August	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31						
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October										MAPG-AAPG 2nd International Convention (Marrakesh - MOROCCO)																											
November																																					
December																																					



Conferences



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