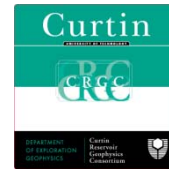




Curtin University



Geo-soundings

NEWSLETTER – JUNE 2011

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WELCOME

Welcome to our second edition of *Geo-soundings* for 2011. During the past quarter staff and senior students have been very productive, resulting in 9 journal publications, 13 conference/poster papers, public presentations and convened a workshop. We are also proud to report on some honours and awards bestowed on staff and students during the past quarter and we hope that you enjoy the contents of this newsletter.

JOURNAL/BOOK PUBLICATIONS

Bóna, A., and M. Slawinski, 2011, *Wavefronts and Rays As Characteristics and Asymptotics*. Published by World Scientific.

Bona, A., 2011, *Shot-gather time migration of planar reflectors without velocity model*. Published in *Geophysics*, Vol 76 (2), 93-101, March-April 2011.

Bona, A., B. Gurevich, G. Ball, and M. Pervukhina, 2011, *Seismic Anisotropy - Introduction*. Published in *Geophysics*, Vol 76, (3), WA1-WA2, May-June 2011.

Gurevich, B., M. Pervukhina, and **D. Makarynska**, 2011, *An analytic model for the stress-induced anisotropy of dry rocks*. Published in *Geophysics*, Vol 76, (3), WA125-WA133, May-June 2011

Lebedev, M., A. Bona, R. Pevzner, and B. Gurevich, 2011, *Elastic anisotropy estimation from laboratory measurements of velocity and polarization of quasi P-waves using laser interferometry*. Published in *Geophysics*, Vol 76, (3), WA83-WA89, May-June 2011

Nadri, D., **A. Bona**, M. Brakanovski, and T. Lokajicek, 2011, *Estimation of stress-dependent anisotropy from P-wave measurements on a spherical sample*. Published in *Geophysics*, Vol 76, (3), WA91-WA100, May-June 2011

Pervukhina, M., **B. Gurevich, P. Golodoniuc**, and D.N. Dewhurst, 2011, *Parameterization of elastic stress sensitivity in shales*. Published in *Geophysics*, Vol 76, (3), WA147-WA155, May-June 2011.

Sil, S., M.K. Sen, and **B. Gurevich**, 2011, *Analysis of fluid substitution in a porous and fractured medium*. Published in *Geophysics*, Vol 76, (3), WA157-WA166, May-June 2011

Urosevic, M., R. Pevzner, V. Shulakova, A. Kepic, E. Caspari and S. Sharma, 2011, *Seismic monitoring of CO2 injection into a depleted gas reservoir – Otway Basin Pilot Project, Australia*. Published in *Energy Procedia*, Vol 4, 3550-3557, April 2011.

CONFERENCE PRESENTATIONS

Lopes, S., and **M. Lebedev**, 2011, *Reservoir rock fluid imbibition experiments: complex study using X-ray computer tomography and ultrasonic techniques*. Poster Presented at EGU General Assembly, Vienna, April.

EAGE Conference, Vienna May 2011

Oral Presentations:

AlMalki, M., B. Harris, and C. Dupuis, 2011, *Simultaneous Vertical Seismic Profiling in Two Wells and the Virtual Source Method; Perth Basin Western Australia*.

Alonaizi, F., R. Pevzner, A. Bona, E. Caspari, and B. Gurevich, 2011, *Application of Diffracted Wave Analysis to Time-lapse Seismic Data for CO2 Leakage Detection*.

Caspari, E., T.M. Müller, and **B. Gurevich**, 2011, *Analysis of Patchy CO2 Saturation from Time-lapse Sonic Logs Using Rock Physics Modelling*.

Dean, T., and **J.C. Dupuis**, 2011, *The Vibroelectric Method - A New Tool for Nearsurface Characterisation and Improved Seismic Data Quality*.

Kinkela, J., **R. Pevzner**, and **M. Urosevic**, 2011, *Ground Roll Repeatability Analysis - CO2CRC Otway Project Case Study*.

Malehmir, A., M. Andersson, **M. Lebedev, M. Urosevic**, and **V. Mikhailsevitch**, 2011, *Experimental Estimation of Compressional Velocities of a Series of Swedish Crystalline Rocks and Ores*.

Nadri, D., J. Sarout, **A. Bóna**, and D. Dewhurst, 2011, *Estimation of Thomsen Anisotropy Parameters Using the P-wave Velocities on a Cylindrical Shale Samp*.

Shaiban, A., **A. Bona, R. Pevzner, and M. Urosevic**, 2011, *Time-lapse Seismic Anisotropy Analysis for CO2 Geosequestration Using 3D 3C VSP Data*.

Shulakova, V., M. Pervukhina, **M. Lebedev**, T. Mueller, S. Mayo, S. Schmid, B. Clennell, and **B. Gurevich**, *Computation of Elastic Properties Based on Microtomogram Images*.

Strobach, E., B.D. Harris, A.W. Kepic, J.D. Dupuis, and M.W. Martin, 2011, *Estimation of Water Content in Partially Saturated Soil Horizons with Ground-penetrating Radar*.

Poster Presentations:

Alulawi, B.H., and **B. Gurevich**, 2011, *Analytical Wavefront Curvature Correction for Spherical Wave AVO*.

Mikhaltsevitch, V., M. Lebedev, and B. Gurevich, 2011, *A Low-frequency Apparatus for Characterizing the Mechanical Properties of Rocks*.

PUBLIC PRESENTATIONS

Boris Gurevich presented two papers at the **EAGE Workshop on Naturally & Hydraulically Induced Fractured Reservoirs: from NanoDarcies to Darcies** from the 10th - 13th April in Nafplio, Greece. *Signatures of Fracture and Stress Induced Anisotropy* by Pervukhina, M., and **B. Gurevich**, and *Frequency Dependent Anisotropy of Porous Rocks with Aligned Fractures* by **Gurevich, B., R.J. Galvin, and T.M. Mueller**.

Andrew Squelch gave a presentation titled *An evolving interest in 3D visualisation* at the **3D Visualisation: eVOLution of Thought Seminar**, held in the ARRC Auditorium on the 11th April.

On 19th and 20th May the **Curtin Reservoir Geophysics Consortium** hosted a two day short course which focussed on the **Modern Methods Used in Seismic Imaging**. The course was presented by visiting **Professor John Bancroft** from CREWS, University of Calgary. The course was held in the ARRC Auditorium and was attended by 15 industry participants and 12 students.

RESEARCH VISITS

Anton Kepic was invited by the China University of Geosciences (CUG) to speak at the **International Workshop on Mineral Exploration at Depth and Under Cover**, held 18th - 23rd April, Wuhan, China. He gave a presentation entitled *Mineral Exploration with the Seismic Reflection Method*.

EXPOS

Dominic Howman has again played a leading role in the Department's presence at the **Careers and Education Expo**, held 12th - 15th May at the Perth Convention and Exhibition Centre. More than 13,000 attended the four day event. We are very grateful to Dominic and the following staff and students who volunteered to contribute their time to support this activity: **Christian Dupuis, Brett Harris, Anton Kepic, Mark Lwin, Andrej Bona, Boris Gurevich, Aleks Dzunic, Konstantin Tertysnikov** and **Bai Chun Sun**.

Dominic Howman also participated in the annual **Geology, Earth and Environmental Sciences Day (GEES Day)**, held at the Perth Zoo on the 13th April. Dominic gave presentations to four groups of Year 10 students, providing an explanation of what geophysics is and how and where to study this science.

HONOURS /GRANTS/AWARDS

Congratulations to **Boris Gurevich** who has been greatly honoured by being elected a **Fellow** of the **Institute of Physics**, in recognition of his personal contribution to the advancement of physics, as a discipline and a profession.

Congratulations to four geophysics students who received **AusIMM Awards of Academic Excellence** for their excellent academic achievements during 2010. The students are:

Mr Gavin Jones – Best First Year Student

Mr Grant Fryer – Best Second Year Student

Mr Jason Valuri – Best Third Year Student

Mr Jeremy Smith – Best Fourth (Honours) Year Student

STAFF NEWS

Melanie Troebinger, our Finance & Project Coordinator departed during the month of May on 12 months maternity leave. We wish Melanie and her husband all the very best for the arrival of their first baby.

We welcome **Michelle McWha** to our department as Melanie's replacement for the next 12 months.

UPCOMING EVENTS

7th Monitoring Network Meeting

7th – 9th June, Potsdam, Germany

Society of Petroleum Engineers Advance Technology Workshop (SPEATW) – ‘Carbon Capture and Sequestration’

19th – 22nd June, Sunshine Coast, Queensland

International Workshop on Advanced Ground Penetrating Radar (IWAGPR)

22nd – 24th June, Aachen, Germany

International Union of Geodesy and Geophysics (IUGG) 2011 General Assembly

28th June – 7th July, Melbourne, Australia

Curtin Open Day

21st August, Bentley Campus

EAGE Near Surface

12th -14th September, Leicester, United Kingdom

SEG International Exhibition and 81st Annual Meeting

18th -23rd September, San Antonio, Texas, U.S.