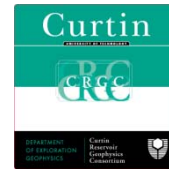




Curtin University



Geo-soundings

NEWSLETTER – DECEMBER 2010

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WELCOME

Welcome to our final edition of *Geo-soundings* for 2010, which contains news and information about the activities of the Department over the past 3 months. The last quarter has been very productive and busy and as another year draws to a close, staff and students are looking forward to the short break over the festive season. All members of the department wish all our readers a happy and safe holiday and we hope you enjoy this edition.

JOURNAL/BOOK PUBLICATIONS

Bóna, A., D. Nadri, and M. Brajanovski, 2010, *Thomsen's parameters from p-wave measurements in spherical sample*: Geophysical Prospecting.

Gurevich, B., D. Makarynska, O. de Paula, and M. Pervukhina, 2010, *A simple model for squirt-flow dispersion and attenuation in fluid-saturated granular rocks*: Geophysics, **75**, 109–120.

CONFERENCE PRESENTATIONS

Bóna, A., 2010, *Second derivatives of travel time for time migration without velocity model*, Presented at the Seismic Waves in Laterally Inhomogeneous Media VII, Teplá, Czech Republic, June 2010.

SEG Conference, Denver October 2010

Al Jabri, Y., and M. Urosevic, 2010, *Land seismic repeatability prediction from near- surface investigation*.

Al Jabri, Y., and M. Urosevic, 2010, *Short time (zero time) lapse seismic repeatability test: CO2CRC Otway Project, Victoria Australia*.

De Paula, O., M. Pervukhina, and **B. Gurevich,** 2010 *Testing Gassmann fluid substitution in carbonates: Sonic Log vs. Ultrasonic core measurements*.

Greenwood, A., M. Urosevic, and **R. Pevzner,** 2010 *Feasibility of borehole reflection seismology for hard rock mineral exploration*.

Gurevich, B., and M. Pervukhina, 2010, *An analytical model for stress-induced anisotropy of a cracked solid*.

Lebedev, M., A. Bona, R. Pevzner, and **B. Gurevich,** 2010, *3-C laboratory ultrasound: A new method for measuring elastic anisotropy of rocks*.

Pervukhina, M., **B. Gurevich,** P. Golodoniuc, and D.N Dewhurst, 2010, *Trends in micro-crack properties and reconstruction of TI elasticity tensors of shales*.

Pevzner, R., A. Bona, B. Gurevich, I. Yavuz, **A. Shaiban** and **M. Urosevic,** 2010, *Seismic anisotropy estimation from VSP data: CO2CRC Otway Project case study*.

Sil, S., M. K. Sen, and **B. Gurevich,** 2010, *Sensitivity analysis of fluid substitution in a porous medium with aligned fractures*.

AusIMM Conference, Auckland November 2010

Meyers, J., 2010, *Onshore ironsand exploration on the North Island of New Zealand, regional prospecting to resource definition in a short time frame by utilising geophysical methods and data integration*.

CRGC Conference, Rottneest Island December 2010

Oral Presentations:

Alonaizi, F., R. Pevzner, and **A. Bóna,** 2010, *Diffraction detection on time-lapse seismic data*.

Bóna, A., 2010, *Classification of seismic anisotropy*.

Caspari, E., B. Gurevich, and T. Müller, 2010, *Analysis of patchy saturation of CO2 using time lapse sonic logs and rock physics modeling*.

De Paula, O., M. Pervukhina, and **B. Gurevich,** 2010, *Testing Gassmann fluid substitution in carbonates: sonic log versus ultrasonic core measurements*.

De Paula, O., E. Strobach, R. Pevzner, Ricardo Jahmert, and Lindsay Collins, 2010, *GPR Imaging of carbonate sequences in Shark Bay, WA - a Holocene reservoir analogue*.

Dupuis, C., 2010, *Seismoelectric imaging*.

Gurevich, B., and M. Pervukhina, 2010, *Comparison of patterns of seismic anisotropy caused by fractures and stress*.

Gurevich, B., D. Makarynska, M. Peruvkina, and O. De Paula, 2010, *Squirt model without adjustable parameters?*

Harris, B., 2010, *Electrical anisotropy and the marine controlled source electromagnetic method.*

Juhlin, C., 2010, *The role of seismic methods for geological storage of CO₂ at the CO₂SINK project site, Ketzin, Germany.*

Kepic, A., 2010, *High density land seismic acquisition: developments at Curtin.*

Lebedev, M., A. Bóna, and R. Pevzner, 2010, *3 Component laboratory ultrasonic measurements: a pathway to elastic anisotropy determination.*

Lopes, S., V. Mikhaltsevitch, and M. Lebedev, 2010, *Reservoir rock fluid imbibition experiments: complex study using X-ray computer tomography and ultrasonic technique.*

Mikhaltsevitch, V., M. Lebedev, and B. Gurevich, 2010, *A low-frequency laboratory apparatus for characterizing elastic properties of the specimen.*

Pethick, A., 2010, *Developing interactive MCSEM software for assistance in field data modelling and inversion.*

Pevzner, R., and J. Kinkela, 2010, *Analysis of ground roll repeatability.*

Shaiban, A., R. Pevzner, and A. Bóna, 2010, *Seismic anisotropy analysis using VSP data from the CO₂CRC Otway Basin Project.*

Poster Presentations:

Almalki, M., B. Harris, and C. Dupuis, *Multi-frequency full waveform sonic in the screened interval of a large diameter production well.*

Gavin, L., and B. Harris, *Integration of long offset and airborne TEM with high resolution seismic reflection for hydrogeology; Northern Perth basin, WA.*

Shaiban, A., R. Pevzner, and A. Bóna, *Seismic anisotropy estimation from 3-D VSP data.*

Tertyshnikov, K., *Overview of EM induced polarisation method for hydrocarbon exploration.*

PUBLIC PRESENTATIONS

ASEG Student Night Presentations Citywest Function Centre, Perth November 2010

Seven Honours students were chosen to present their work at the recent ASEG Student Night held on 10th November 2010. They were:

Akers, J., 2010, *Effect of gas saturation on the elastic properties of coal.*

Botman, C., 2010, *Determining the geothermal properties of the Perth Basin lithology to aid geothermal energy projects.*

Byett, M., 2010, *A comparison of towed and non-towed electrical resistivity imaging for shallow environments.*

Gavin, L., 2010, *Integration of long offset and airborne TEM with high resolution seismic reflection for hydrogeology; North Perth Basin, Western Australia.*

Kinkela, J., 2010, *Ground roll repeatability analysis.*

Malajczuk, S., 2010, *Time lapse thermal and induction logging in the near well environment, Perth Basin WA.*

Smith, J., 2010, *Seismic reflection as a direct detector of gold mineralisation in the Carlin District, USA.*

AWARDS/HONOURS/PRIZES

Congratulations to **Ms Michelle Byett** who was awarded the **Best Presentation Prize** for her talk given at the ASEG WA Branch Student Night Presentations evening on the 10th November.

RESEARCH VISITS

Jayson Meyers attended the AusIMM conference in Auckland New Zealand held **24th to 26th November.**

Milovan Urosevic visited, Kyoto Japan, at the invitation of Research Institute of Innovative Technology for the Earth (RITE) to attend a technical workshop on CO₂ monitoring on **9th December.** He gave a presentation on seismic monitoring at Otway.

CRGC CONFERENCE

The Annual Curtin Reservoir Geophysics Consortium (CRGC) was held at the Rottneest Lodge on the 9-10 December. There were 36 attendees over the two days, including representatives from sponsoring companies; Apache, BHP Billiton, CGGVeritas, Chevron, Exxon Mobil, Petrobras, Santos and Woodside. The CRGC Annual Report is now available for anyone wishing to have access to a copy.

VISITORS

Dr Alireza Malehmir visited for 1 month (mid-Nov to mid-Dec). Alireza holds a position as Assistant Professor in the Department of Earth Sciences at Uppsala University, Sweden. While here, Alireza worked with Milovan Urosevic, conducting a series of measurements (V_p, V_s, at elevated pressure) on a series of Swedish rocks in our petrophysics laboratory.

Professor Christopher Juhlin is visiting from 1 December 2010 to mid-January 2011. Chris is a Professor in Geophysics in the Department of Earth Sciences at Uppsala University, Sweden. While here, he is doing some research related to geological storage of CO₂ with particular emphasis on seismic monitoring and on hard rock seismology.

UPCOMING EVENTS

EAGE Conference 16th – 20th January 2010 Istanbul, Turkey.



We wish you all peace, hope and joy for the holiday season.

Merry Christmas and a Happy New Year!