



Geophysical Society of Pittsburgh



*Proudly Presents on October 2nd
Oktoberfest!*

Lassen Sie Ihrer inneren Bayerischen! (Release Your Inner Bavarian!)

3-D VSP: Improvements in Structural Imaging Dr. Les Nutt, Schlumberger

Abstract:

Today 3D VSPs are an accepted tool of choice for high resolution imaging in the vicinity of the well bore. Recent 3D VSP applications have gone beyond structural imaging to derive stratigraphic interpretations. Such interpretations depend on the successful and accurate processing of an initial structural image.

3D VSP best practices require detailed pre-survey modeling and planning to maximize the amount of useful data recorded in the minimum rig time. Currently large arrays are available but in the end it is usually well logistics that dictate where receivers can be placed in the well bore and be in good acoustic coupling to the formation. Simple ray trace modeling, particularly in complex geology, may be insufficient for survey design. In all cases we recommend using a 3D finite Difference simulation to generate synthetic data which can be processed to verify that the processed data meets the survey expectations.

Once the 3D VSP data is acquired the initial pre-survey model can be calibrated to match the measured times. This is a critical step in VSP processing and is a combination of Travel Time tomography, CIP tomography and more recently borehole calibrated reflection tomography.

3D VSP acquisition, while free of common surface seismic type noise, does have its own specific noise issues which need to be addressed eg tube wave, weak coupling, random tool noise and or slippage etc. Fortunately many surface seismic type de-noise solutions exist to help mitigate noise problems. One of the fundamental limitations of 3D VSP is the relatively limited aperture acquisition. The challenge in 3D VSP imaging is to maintain horizontal resolution while improving image quality. Full aperture migrations have generally better horizontal resolution but are affected by “swing” noise or migration smiles whereas small apertures (using dip from model for example) have better continuity but can “smear” faults. We address this issue by using RBI (Rapid Beam Imaging) to remove highly dipping migration artifacts.

Biography:



Dr. Les Nutt is a Senior Advisor at Schlumberger currently assigned as Borehole Seismic Marketing Manager within the WesternGeco GeoSolutions organization. During his 30 years with Schlumberger he has held various positions in Operations, Sales and Marketing, Interpretation Development and in Engineering. He has a B.Sc. in Pure and Applied Physics and a Ph.D. in Physics from Queens University, Belfast.

Please RSVP using the PayPal link on the Geophysical Society of Pittsburgh website at: www.thegsp.org

Please note that registration for this lecture will be limited to the first 80 registrants!

Cost \$35 (\$20 for Students). Meeting Location: The Penn Brewery, 800 Vinial Street, Pittsburgh, PA 15212

Oktoberfest Menu

4:45 pm Social Hour

This month's social hour is proudly sponsored by **SEITEL, THE Onshore Seismic Data Company**

Beers on Tap:

*Allegheny Pale Ale, the newest member of the Penn Brewery brand.
Penn Dark Lager Beer, a European-Style Dark / Münchener Dunkel.
Penn Gold Lager, a Münchener Helles and Export : Münchener Helles.
Penn Oktoberfest Bier, a Märzen / Oktoberfest style beer.*

Hors D'oeuvres

*Warm Soft Pretzels with Mustard
Mini Kielbasa Reuben on Cocktail Rye
Penn Pilsner Beer Cheese and Crackers
Side of Smoked Salmon with Pumpnickel, Cream Cheese,
Chopped Eggs and Red Onions, and Capers*

5:45 pm Dinner

Dinner Buffet

*Schweinebraten
Smoked Bratwurst Sausages and Sauerkraut
Grilled Vegetable and Penne Pasta Alfredo
Hot German Potato Salad
Potato Pancakes
Sauerkraut
Fresh Green Beans with Red Peppers
Tossed Green Salad with Ranch, Italian and Balsamic Dressing*

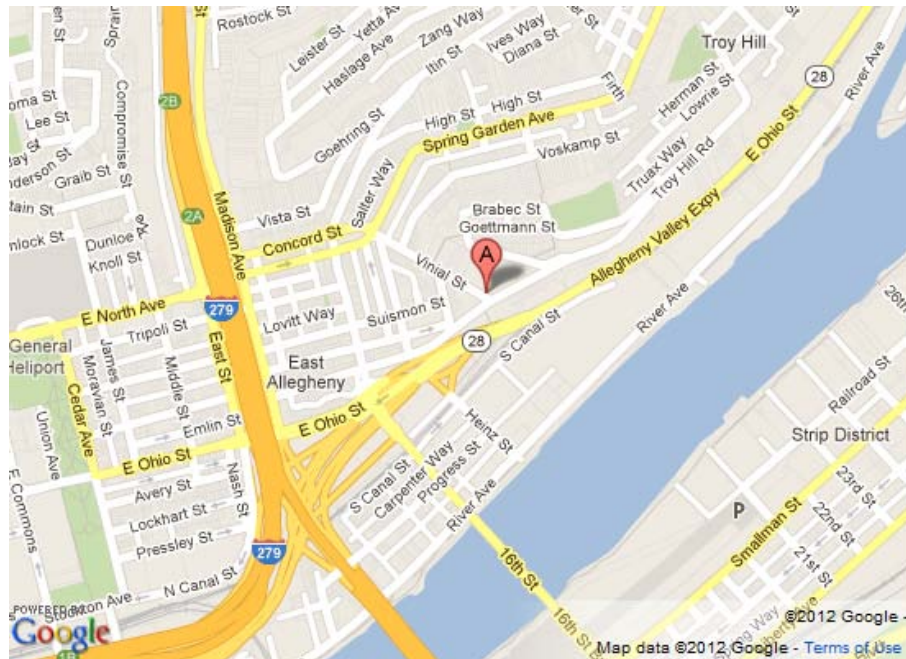
Dessert

Black Forest Sheet Cake

7:00 pm Lecture

We are pleased to announce that this month's lecture will be held at :

**Penn Brewery
800 Vinial Street
Pittsburgh, PA 15212
(412) 237-9400**



Geophysical Society of Pittsburgh Upcoming Lecture Series:

***October 2th: 3-D Vertical Seismic Profiling: Improvements in Structural Imaging, Les Nutt, PhD,
Schlumberger - Meeting to be at the Penn Brewery, 800 Vinial Street, Pittsburgh***

November 12th : Check Website for details

December 4th: Check Website for details

January 8th: Check Website for details

February 5th: Check Website for details

March 5th: Check Website for details

April 2nd: Check Website for details

May 7th: Check Website for details



Photo: Bill Harbert

News and Events from Geoscience Organizations



Buffalo Association of Professional Geologists (BAPG)

2012 WNY Geologic Symposium: Shale Gas – Development Potential and Lessons Learned.

September 21, 2012, 7:30 to 5:00 PM at the Buffalo Niagara Convention Center. Professional Development Credit Eligible. For more information or to register please visit <http://www.bapg.org/Default.aspx?pageId=754128&eventId=496458&EventViewMode=EventDetails>



41st Annual Eastern Section AAPG Meeting, Cleveland, Ohio, September 22 – 26, 2012.

Visit <http://www.esaapg2012.org/conference/41st-annual-eastern-section-aapg-meeting> for more information.



The SEG International Exposition and 82nd Annual Meeting

SEG heads back to Las Vegas on 4-9 November 2012, for the 82nd Annual Meeting. Early bird Registration Ends September 21, 2012. Register Today at <https://registration.seg.org/registration>



2012 GSA
ANNUAL MEETING & EXPOSITION

4-7 November | Charlotte, North Carolina, USA

The 2012 Geological Society of America's Annual Meeting & Exposition

November 4 – 7 at the Charlotte Convention Center

More information available at <http://www.geosociety.org/meetings/2012/reg.htm>

We would like to thank our 2012-2013 Corporate Sponsors:

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 (jwigal@abartaenergy.com) for
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