



Geophysical Society of Pittsburgh



*Proudly Presents Tuesday, February 12, 2013
At
Penn Brewery, Pittsburgh, Pennsylvania*

Using Multi-Focusing 3D Diffraction Imaging to Predict Fracture Swarms in Unconventional Reservoirs

by

Dr. Marianne Rauch-Davies

Abstract: Unconventional reservoirs are a great challenge today and successful drilling within these reservoirs has a unique set of problems. Most wells are drilled horizontally through the reservoir and the fracking technology is applied to open the bore space, generate permeability and produce hydrocarbons. The pre-drilled knowledge on natural fracture and small offset faults is very important as these geological elements can interfere with drilling and fracking process and help deciding on potential locations for drilling and influence the production rate. Seismic resolution from conventional reflection imaging is generally not sufficient to resolve these small scale rock properties.

Diffacted waves are events that are produced by the radial scattering of a wave after it meets a discontinuity such as fracture swarms, small amplitude faults and karsts that cause local sharp changes in the geometrical or lithological characteristics. A method that is based on coherent summation of diffracted waves was applied to a 3D data set over an unconventional oil reservoir. An integrated study that includes well information, diffraction energy and seismic attributes as well as surface information showcases the usefulness of diffraction events to predict fracture swarms within a tight oil reservoir.

Biography:



Dr. Marianne Rauch-Davies is a highly accomplished expert in the field of geosciences. Marianne's extensive experience stems from her more than 25 years of working with leading service and technology companies in the oil and gas industry. Marianne currently serves as Geomage's VP of Applied Technologies, focusing on business development and managing the practical implementation of Geomage technologies within its geoscience projects. Marianne holds a Ph.D. in Physics from Karl Franzens Universitaet, Graz, Austria.

*Please RSVP using the PayPal link on the Geophysical Society of Pittsburgh website at: www.thegsp.org
Cost \$35 (\$20 for Students). Meeting Location: Penn Brewery, 800 Vinial St., Pittsburgh, PA 412.237.9400*

February 12th Meeting Menu



5:00 pm Social Hour

This month's social hour is proudly sponsored by
[Geophysical Pursuit, Inc.](#)

Beer on Tap:

Alt"er" Ego

Penn Dark Lager Beer, a European-Style Dark

Penn Gold Lager

Penn Pilsner

Also Available: Red & White wine

Hors D'oeuvres:

Side of Smoked Salmon with Pumpernickel, Cream Cheese, Chopped Eggs and Red Onions, and Capers

6:00 pm Dinner

Dinner Buffet

Schweinebraten

Smoked Bratwurst Sausages and Sauerkraut

Balsamic Chicken with grilled vegetables,

Beef Tenderloin Medallions with wild mushroom demi glaze,

Rice Pilaf, Fresh Green Beans with Red Peppers

Tossed Green Salad with Ranch, Italian and Balsamic Dressing.

Dessert: Apple and Cherry Pie

Coffee & Cream

7:00 pm Lecture

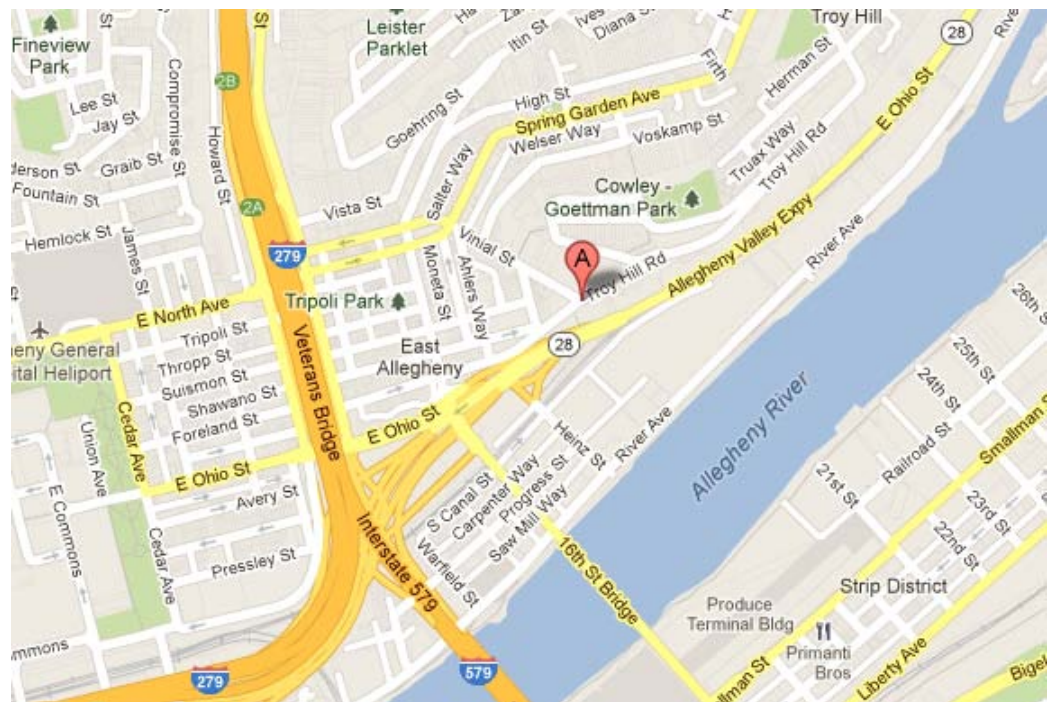
We are pleased to announce that this month's lecture will be held at :

Penn Brewery

800 Vinial Street

Pittsburgh, PA 15212 USA

412.237.9400



Geophysical Society of Pittsburgh Upcoming Lecture Series:

February 12th: - Using Multi-Focusing 3D Diffraction Imaging to Predict Fracture Swarms in Unconventional Reservoirs, by Dr. Marianne Rauch-Davies - Penn Brewery, 800 Vinial St., Pittsburgh, PA 412.237.9400

March 5th: 3-D Acoustic Waveform Inversion, Dr. Jing Chen, GeoTomo (Tentative)

April 9th: Seismic Imaging of Complex Structure in the Valley and Ridge Province, Karen Lanning, PreSeis (Tentative)

May 7th: 5-D Interpolation, Dennis Langlois, CGG Veritas (Tentative)



Photo: Bill Harbert

News and Events from Geoscience Organizations

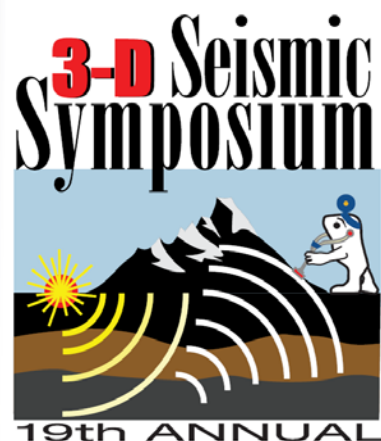


Solving Water Problems in Oil and Gas Production: New Technologies for Cost Savings and New Revenue Flows

26-27 February 2013 | Fort Worth, Texas

Water concerns are intensifying as issues around hydraulic fracturing, new regulations, drought, and surface water management continue to dominate the public. More information on this Workshop can be obtained at <http://www.aapg.org/gtw/fortworth2013/index.cfm>

The 19th Annual 3-D Seismic Symposium, jointly sponsored by the [Rocky Mountain Association](#) of Geologists and the [Denver Geophysical Society](#), will be held **Tuesday, March 5th, 2013 at the Downtown Sheraton Hotel in Denver, Colorado.** 3-D Symposium will highlight 12 presentations, concentrating on case histories in resource plays using large-scale 3-D seismic surveys. Case studies include Rocky Mountain projects in the Niobrara, Bakken, and Piceance, along with other analog plays from the US (Fayetteville, Marcellus, and Eagle Ford), and Western Canadian Basins. Attendees to this year's Symposium will witness the most up-to-date concepts and workflows in our industry, with many of the talks being presented here in public for the first time. Early Registration is currently available by contacting either [DGS](#) or [RMAG](#) societies or via the [3-D Symposium website](#)



The Symposium on the Application of Geophysics to Engineering and Environmental Problems ([SAGEEP](#)) provides geophysicists, engineers, geoscientists and end-users from around the world an opportunity to meet and discuss near-surface applications of geophysics.



“We are excited to announce [NAPE East](#) in Pittsburgh following the tremendous success of this year's Winter NAPE. While we broke records for attendance, exhibitor participation and charitable donations here in Houston, it is still difficult for companies in many parts of the country to get to Houston for NAPE so we are going to bring the Expo to them by expanding regionally.” - Marty Schardt, Executive Vice President of the American Association of Professional Landmen (AAPL) and General Partner of NAPE

News and Events from Geoscience Organizations



WORKSHOP
SEG/SPE Workshop
**Seismic While Drilling:
Managing Risk and Optimizing Well Placement**
Moody Gardens Hotel & Convention Center
Galveston Island, TX • 1-3 May 2013

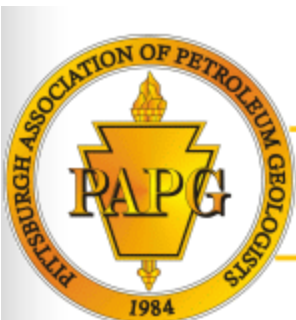
Top international E&P operators, service companies, and applied research personnel will gather to discuss the latest advances in Seismic-While-Drilling (SWD). The Abstract submission deadline is 15 February 2013. For more information see: <http://www.seg.org/documents/10161/7379860/GALV13-Call4Papers.pdf>



UNCONVENTIONAL
RESOURCES TECHNOLOGY CONFERENCE
FUELED BY SPE • AAPG • SEG
12-14 August 2013 • Denver • Colorado Convention Center

Pittsburgh Geological Society

The PGS Generally Meets on the 3rd Wednesday of the Month From September through May. More information is available at <http://www.pittsburghgeologicalsociety.org/>



P·A·P·G

Pittsburgh Association of
Petroleum Geologists

An AAPG Affiliated Society

www.papgrocks.org

The PAPG Generally Meets on the 2nd Monday of the Month From September through May. More information is available at <http://www.papgrocks.org/>

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

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

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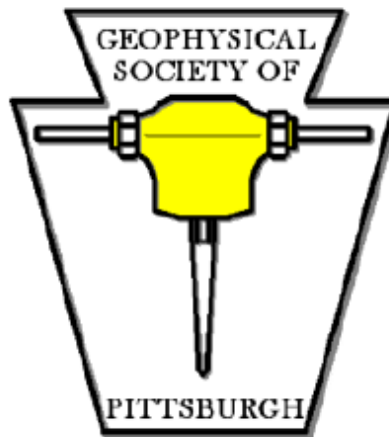


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- *Outstanding Monthly Lecture Series*
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- *Short Courses*

Please contact Eddie Gonzales (egonzales@dawson3d.com) for Sponsorship Opportunities.
