



PAPG Meeting
Radisson - Green Tree
18 February 2010

The Significance of Seismic Anisotropy as it relates to Exploration in the Appalachian Basin

presented by

Joel Starr

Exploration Geophysicist – EQT Production

Abstract:

Seismic anisotropy occurs when the velocity of an acoustic wave changes with the direction of propagation. This phenomenon can be both a problem and an opportunity in seismic exploration. Polar anisotropy (VTI) can cause errors in time to depth conversion and the loss of long offset information; thereby eliminating the opportunity to extract rock mechanic information from the seismic data (i.e. AVO and inversion). Azimuthal anisotropy (HTI) can be used to evaluate vertical fracture direction and density.

Seismic anisotropic analysis is not new to the Appalachian basin. In 1982 directional changes in stacking velocities were used in an attempt to understand natural fracturing of the Devonian shale in the Cottageville field in West Virginia. Modern long offset 2D data exhibit anisotropy signatures at Marcellus time. Correcting this effect is critical for geo-steering horizontal wells in the Marcellus and other shale plays, as well as AVO analysis of the shales.

Over the past few years the seismic industry has developed several strategies for dealing with and extracting information from acoustic anisotropy. This presentation will review some of the basic ideas and limitations behind anisotropy parameter estimation and application.

Biography:

Joel Starr is the Exploration Geophysicist for EQT Production in Pittsburgh PA. He received a B.S. in Geology from Juniata College in 1985 and an M.S. in Geophysics from the University of New Orleans in 1990. He has worked in the Gulf of Mexico, South America, North Sea and Arabian Gulf. He spent too much time in West Africa and not enough time in Australia. Joel contributed to the development the Ocean Bottom Seismic acquisition technique in the early 1990's as well as several methods for processing multi-component data. He holds five patents and several publications in the SEG and EAGE.

[For reservations to this informative and entertaining evening, please see the attached reservation form or pay in advance using PayPal by visiting \[PAPGocks.org\]\(http://PAPGocks.org\).](#)

NEWS AND EVENTS

PAPG Website: Visit the website at <http://www.PAPGrocks.org>.

Mark your calendar now for these upcoming events (more details on PAPGrocks.org) -

February 2 Carnegie, PA

SPE meeting

See website for more details

February 19th – 20th 2009, Pittsburgh, PA

Engineer's week

See website for more details

February 23rd – 25th 2009, Pittsburgh, PA

SPE Unconventional Gas Conference

See website for more details

May 14th – 16th 2009

Utica Shale field trip

[Visit PAPGrocks.org for all upcoming events and newly posted classifieds](http://www.PAPGrocks.org)

Have information you want to share with the organization?

Please contact the secretary to add the information to the next newsletter.

WHAT IS THE PAPG?

PAPG is a non-profit organization founded in 1984 to provide a forum for Petroleum Geologists in the Pittsburgh Area to meet socially and discuss technical topics relative to the exploration and development of reserves in the Northern and Central Appalachian Basin. PAPG is an affiliated association with AAPG (American Association of Petroleum Geologists) and has representation in the House of Delegates. Educational opportunities are provided via field trips, seminars and AAPG Sectional meetings, sponsored solely by PAPG or in conjunction with the PTTC (Petroleum Technology Transfer Council), PGS (Pittsburgh Geologic Society) and SPE (Society of Petroleum Engineers).

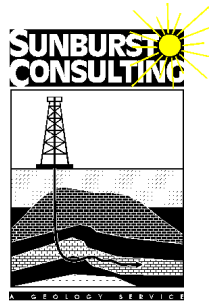
Although PAPG is predominately a geologic organization, numerous industry professionals including geophysicists, engineers, lawyers and landmen are among PAPG's members and find the interaction at meetings and educational opportunities beneficial to their professions. PAPG also encourages student membership and participation.

Meetings are typically held monthly from September through May in locations within 50 miles of downtown Pittsburgh. From time to time, meetings are held in conjunction with SPE and PGS.

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The PAPG wishes to thank the companies who have contributed to the PAPG 2009-10 season.

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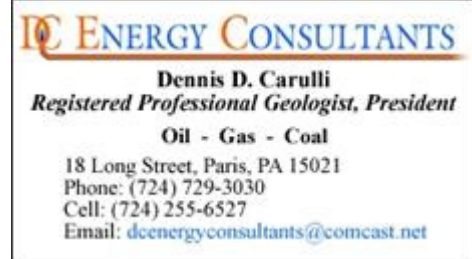
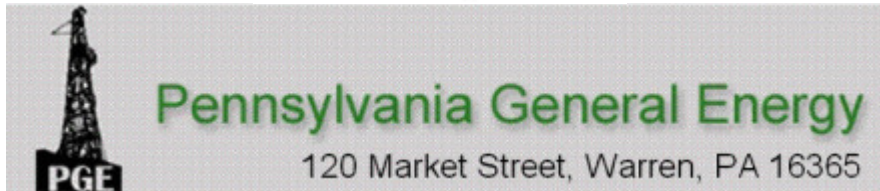
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Sponsor Information

If you or your company would like to sponsor the PAPG and help support the continuation of our Meetings, Field Trips, and other events, we ask that you send a donation to the PAPG. Any contribution of \$100.00 or more by any group or individual will be recognized on our website, in the monthly newsletter, and at scheduled monthly meetings.

We ask that you show your support for the PAPG by a contribution and your continuing attendance at the monthly meetings.

We appreciate your continued support.

Contributions may be sent to:

Eric Ober, PAPG president
560 Epsilon Drive
Pittsburgh, PA
15238-2837 USA

Or use the link on the webpage: <http://papgrocks.org/sponsors.htm>

CONTACT THE PAPG

PAPG Officers:

- President:** **Eric Ober** -- Texas Keystone, Inc.
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Email: bob@dallas-morris.com

PAPG 2009-2010 DUES

PAPG dues for the 2009-2010 season are now DUE!

*The membership form is attached to this newsletter. Please fill the form out **completely** so that we can ensure that we have your latest contact information. Please email Katie Schmid this information if you pay online. We are planning to publish a membership directory this year and your updated information is crucial.*

NOTICE OF FEBRUARY 2010 MEETING PITTSBURGH ASSOCIATION OF PETROLEUM GEOLOGISTS

DATE: Thursday 18, February 2010

PLACE: Radisson Hotel - Greentree
101 Radisson Drive, Pittsburgh, PA 15220
412-922-8400

TIME: 5:00 PM – Social Hour
6:00 PM – Dinner
7:00 PM – Speaker

TOPIC: “The Significance of Seismic Anisotropy as it relates to Exploration in the Appalachian Basin”

SPEAKER: **Joel Starr**

COST: \$30.00 Paid in advance (if payment received by Feb. 16)
\$35.00 Pay at the door
\$0.00 Students
(Checks payable to PAPG)

DINNER OPTIONS: Chicken Maurice
baked breast with herb stuffing
or
Seasame crusted Atlantic Salmon
with pineapple teriyaki glaze

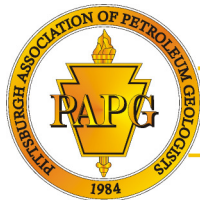
RESERVATIONS: **NEW Pay in advance using PayPal** – Visit PAPGocks.org to reserve your spot or call, email, or mail this reservation form by NOON February 16, 2010 to:

Katie Schmid
412-807-1077 (phone)
kschmid3@gmail.com

NAME(S) _____

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APPLICATION FOR MEMBERSHIP AND MEMBERSHIP RENEWAL

PLEASE INDICATE YOUR MEMBERSHIP STATUS BY CHECKING THE APPROPRIATE BOX:

PROFESSIONAL - RENEWAL

STUDENT - RENEWAL

PROFESSIONAL – NEW MEMBERSHIP

STUDENT - NEW MEMBERSHIP

The **PITTSBURGH ASSOCIATION OF PETROLEUM GEOLOGISTS** membership year runs from JUNE 1 through MAY 31. Monthly meetings are usually held the second Thursday of the month from September through May.

Professional Dues are \$25.00 per year

Student Dues are \$10.00 per year

NEW APPLICATION: If you have never been a member of PAPG, please fill out the remainder of the form, obtain the signatures of two members to sponsor you, and mail check, payable to PAPG, to the address below.

RENEWAL: Please fill out the mailing address/directory information below if your contact information has changed and submit dues, payable to PAPG, to the address below.

Mail completed form and dues payment (*checks only - Payable to PAPG*) to:

Katherine Schmid
12 Watson Blvd
Pittsburgh, PA 15214

MAILING ADDRESS / DIRECTORY INFORMATION – PLEASE COMPLETE ALL INFORMATION

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WOULD YOU BE INTERESTED IN PAPG PARTICIPATION?: Officer Speaker

**WOULD YOU LIKE YOUR CONTACT INFORMATION PLACED
IN THE MEMBERSHIP DIRECTORY (available to members only?)** Yes No