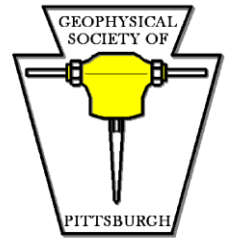


Geophysical Society of Pittsburgh



Tuesday, January 10th, 2012 Lecture: **Rank-Reduction-Based 5D Trace Interpolation** **Stewart Trickett, Fugro Seismic Imaging**

Abstract:

In recent years a new type of seismic processing filter has emerged based on matrix rank reduction on frequency slices. It is extraordinarily effective in removing random noise from pre-stack data, particularly when applied in many spatial dimensions at once. These filters can be adapted to perform seismic trace interpolation in four spatial dimensions, referred to in the industry as "5D interpolation". The resulting data set is fully sampled in CMP, offset, and azimuth. Some advantages are reduced acquisition footprint, reduced noise, fewer migration artifacts, and improved continuity of shallow events. The advent of 5D interpolation in processing may allow us to reduce 3D land acquisition costs, particularly if random sampling is employed in the survey design. This will be demonstrated on real and modeled data.

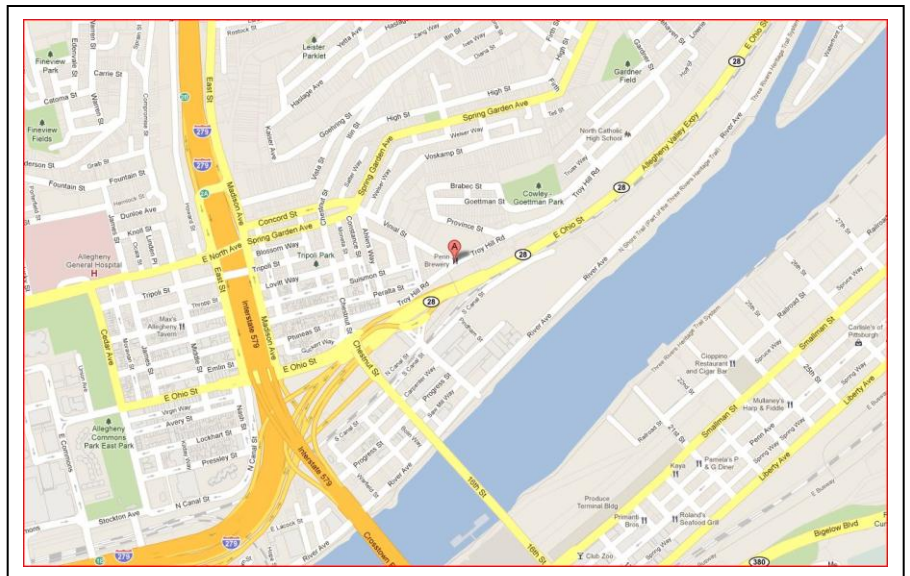
Biography:



Stewart Trickett is Manager of Geophysical Research and Development at Fugro's Calgary office, and is the chief architect of the Kismet data processing system. He has a BSc in Computer Science from the University of British Columbia, as well as a Masters in Mathematics from the University of Waterloo. Stewart started his career at Veritas, where he became the chief architect of their Sage seismic processing system. Stewart has been with Fugro-Kelman since 1993, where he continues to work as a software developer, researcher, and manager. He has presented numerous professional papers at the SEG and CSEG, primarily on deconvolution, noise attenuation and NMO stretch. Over the past 3-4 years, Stewart has been studying the rank-reduction-based filtering methods of Dr. James Cadzow, and has used them to design processing applications for random noise attenuation and 5D trace interpolation.

We are pleased to announce that this months lecture will be held at the Penn Brewery Restaurant , located at:

Penn Brewery Restaurant (Eisenhalle Room)
800 Vinial Street
Pittsburgh, PA 15212, United States
(412) 237-9402



Please RSVP using the PayPal link on the Geophysical Society of Pittsburgh website at: www.thegsp.org
Cost for this months meeting is \$35.

January Lecture Details:



5pm Social Hour

We are pleased to announce that this month's social hour is proudly sponsored by Seitel.

Hors D'oeuvres

- *Side of Smoked Salmon with Pumpernickel, Cream Cheese, Chopped Eggs Red Onions, and Capers*
- *Penn Pilsner Beer Cheese and Crackers*

Beers on Tap

- *Pale Ale*
- *Penn Gold Lager*
- *Penn St. Nikolaus Bock*
- *Penn Pilsner*

5:45pm Dinner Buffet

- *Wiener Schnitzel*
- *Sausages and Sauerkraut*
- *Grilled Vegetable and Penne Pasta Alfredo*

- *Hot German Potato Salad*
- *Rice Pilaf*
- *Fresh Green Beans with Red Peppers*

- *Tossed Green Salad with Ranch, Italian and Balsamic Dressing*

Dessert

- *Raspberry White Chocolate Sheet Cake*

7pm Lecture

- *Rank-Reduction-Based 5D Trace Interpolation, Stewart Trickett, Fugro Seismic Imaging*

Geophysical Society of Pittsburgh Upcoming Lecture Series:

September 6th: Is there a Place for Non-seismic Exploration in Unconventional Resource Plays

October 4th: The Value of Seismic Data in the Marcellus Shale Play

November 1st: Practical Seismic Petrophysics: The Effective Use of Log Data for Seismic Analysis

December 6th: Closure Stress Gradient Estimation of the Marcellus Shale from Seismic

January 10th: Rank-Reduction-Based 5D Trace Interpolation

February 7th: Microseismic Technology in Fracture Detection

March 6th: VSP Imaging Technology used for Assisting in Geosteering in Shale

April 3rd: Microseismic Frac (Passive Seismic) Monitoring

May 1st: Pre-stack Depth Migration (PSDM) for Onshore Applications



The GSP October Lecture: The Value of Seismic Data in the Marcellus Shale Play.

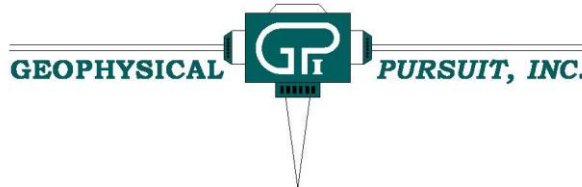
Photo: Bill Harbet

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**Next Month:**

*Microseismic Technology in Fracture Detection*  
*Peter Duncan, Microseismic, Inc.*  
*February 7, 2012*