



Mission-Oriented Seismic Research Program

2013 Annual Meeting and Technical Review

The Westin La Cantera Hill Country Resort

16641 La Cantera Parkway, San Antonio, TX 78256

AGENDA

Tuesday, April 30, 2013

7:00 PM Welcome Reception – El Fortin Lawn

Wednesday May 1, 2013 – San Gabriel Room

7:00 AM Continental Breakfast - outside of the meeting room

8:00 AM Welcome, Introduction/Tutorial on Green's Theorem derived methods within M-OSRP for wave-field separation and wave field prediction objectives
A. B. Weglein

9:00 AM Coffee Break

Preprocessing and impact

9:15 AM Part I. Green's theorem de-ghosting algorithms in the k, ω (e.g., p - V_z de-ghosting) as a special case of x, ω algorithms (based on Green's theorem) with: (1) significant practical advantages and disadvantages of algorithms in each domain, and (2) a new message, implication and opportunity for marine towed streamer, ocean bottom and on-shore acquisition and applications.
Part II . A new Green's theorem de-ghosting method that simultaneously: (1) avoids a finite difference approximation for the normal derivative of the pressure and, (2) avoids the need for replacing the normal derivative of pressure with the vertical component of particle velocity, thereby avoiding issues that can arise within each of those two assumptions/approaches.
A. B. Weglein

10:00 AM Green's theorem for source and receiver de-ghosting with Cagniard-de Hoop, SEAM, and field data tests and impact on multiple attenuation
J. D. Mayhan

- 11:00 AM** Green's theorem preprocessing and multiple attenuation: Acquisition configuration impact and determining the reference velocity for on shore application
Lin Tang
- 12:00 PM** Lunch – San Lorenzo Room
- 1:00 PM** Comparison and analysis of space and temporal frequency, and, spatial wave-number and temporal frequency (e.g., P-V_z) Green's theorem de-ghosting methods, with different receiver spacing and aperture: Implications for 3 D de-ghosting
Jing Wu
- 1:45 PM** Coffee Break
- 2:00 PM** Tutorial for inverse scattering series (ISS) multiple removal: The challenge, response, progress and plans
A. B. Weglein
- Multiple attenuation part I: Enhancing current algorithms and addressing compute challenges**
- 2:45 PM** 1) Incorporating the source array in the ISS free-surface multiple elimination algorithm: impact on removing a multiple that interferes with a primary, and, 2) the first test of wavelet deconvolution on the internal multiple algorithm
Jinlong Yang
- 3:30 PM** Accuracy of the internal multiple prediction when a time-saving method based on two angular quantities (angle constraints) is applied to the ISS internal multiple attenuation algorithm
Hichem Ayadi
- Multiple attenuation part II: Identifying and addressing new issues and providing new capability**
- 4:15 PM** Introduction for Multiple Attenuation Part II
A. B. Weglein

Thursday May 2, 2013 – San Gabriel Room

- 7:00 AM** Continental Breakfast - outside of the meeting room
- 8:00 AM** One dimensional analysis of the effects of including multiples as part of input into the ISS multiple removal algorithm: comparison between free-surface and internal
C. Ma
- 8:45 AM** Coffee Break

9:00 AM Source wavelet effects on the inverse scattering series internal-multiple leading-order-attenuation algorithm and its higher-order modification that accommodate issues that arise when treating internal multiples as subevents
H. Liang

9:45 AM Thesis overview
H. Liang

10:15 AM Isolation of an elimination subseries for the surgical removal of first-order internal multiples with downward reflection at the shallowest reflector
W. Herrera

11:00 AM A method for the elimination of all first order internal multiples from all reflectors in a one D medium: theory and examples
Y. Zou

11:45 PM Lunch – Emily’s Rose Court

ISS imaging

1:00 PM Why is the ISS Kristin-field-data test a compelling case that direct depth imaging without the velocity is viable? Strategy and plan to go from viable to added-value delivery.
A. B. Weglein

2:00 PM Modeling the phase and amplitude of P waves in a heterogeneous elastic medium
A. B. Weglein

2:45 PM A first step towards a P wave field modeling plan
Xinglu Lin

3:15 PM Coffee Break

RTM: Asymptotic and wave theory methods

3:30 PM RTM Introduction
A. B. Weglein

4:00 PM Initial study and implementation of the convolutional Perfectly Matched Layer for modeling of the 2D acoustic wave equation.
W. Herrera

4:25 PM Initial *asymptotic* acoustic RTM imaging results for a salt model
Xinglu Lin

4:40 PM The first *wave theory* RTM, examples with a layered medium, predicting the source and receiver at depth and then imaging, providing the correct location

and reflection amplitude at every depth location, and where the data includes primaries and all internal multiples.

F. Liu

5:30 PM Summary/Plans
A. B. Weglein

5:40 PM Adjournment

7:00 PM Reception – Plaza San Saba

8:00 PM Dinner – Plaza San Saba

Post meeting events/activities

Thursday, June 27, 2013

8:00 AM – 11:00 AM Executive Summary Technical Review at UH, Main Library

Friday, June 28, 2013

7:00PM M-OSRP Annual Meeting Dinner, Location TBD