Mission-Oriented Seismic Research Program

2018 Annual Technical Review and Meeting

Tuesday, June 5 and Wednesday, June 6

UH HSC Room 102

**(please see the nearby map for meeting and parking location-
parking will be validated at the meeting)**

AGENDA

Tuesday, June 5, 2018

8:15 AM   Welcome/reception

8:30 AM   *Arthur B. Weglein*,*
Meeting Introduction and overview- and a succinct tutorial on Green's theorem
for preprocessing

9:00 AM   *Jing Wu* and Arthur Weglein*
Green's theorem preprocessing for offshore and onshore applications

9:45 AM   Coffee/morning break

10:05 AM   *Arthur B. Weglein**
Multiples a new comprehensive perspective on primaries and multiples,
incorporating the removal and usage of multiples

10:30 AM   *Arthur B. Weglein**
Brief ISS tutorial

11:45 AM   Lunch

12:15 PM   *Chao Ma*, Qiang Fu and Arthur Weglein*
Analysis, testing and comparison of the Inverse Scattering Series (ISS) Free-
Surface Multiple-Elimination (FSME) algorithm, and the industry-standard
SRME plus energy minimization adaptive subtraction for isolated free-surface
multiples and multiples proximal to and interfering with other events

1:00 PM   *Yanglei Zou*, Chao Ma and Arthur Weglein*
A multidimensional method that eliminates internal multiples: a new toolbox
option for removing internal multiples that interfere with primaries, without
damaging the primary, and without any knowledge of subsurface properties.

1:40 PM   *Jing Wu* and Arthur Weglein*
Testing, evaluating and analyzing the inverse scattering series internal
multiple attenuation algorithm for an inelastic earth without knowing or needing
the elastic or inelastic subsurface properties

2:15 PM   Afternoon break

2:45 PM   *Qiang Fu*, Yanglei Zou, Jing Wu, and Arthur B. Weglein*
Analysis of the Inverse Scattering Series (ISS) internal multiple attenuation and elimination algorithms as effective tool box choices for absorptive and dispersive media with isolated and interfering events
  --A guide for effectively applying the current ISS internal multiple elimination algorithm with absorptive and dispersive media

3:30 PM   *Yanglei Zou* and Arthur Weglein*
ISS Q compensation without knowing, estimating or determining Q and without using or needing low frequency data

4:30 PM   *Arthur Weglein*
Tuesday meeting adjournment

Wednesday, June 6, 2018

9:00 AM   *Weglein*
A brief tutorial on Green's theorem for Stolt CIII migration and a comparison with RTM

9:45 AM   *Qiang Fu*, Yanglei Zou, Fang Liu and Arthur B. Weglein*
A user guide for implementing Stolt CIII migration and RTM for heterogeneous media: a study and comparison of the difference in resolution provided by these two migration methods

**10:30 AM –
12:30 PM**   *Weglein*

A tutorial on the logic and new math-physics methods developed within M-OSRP required to address pressing and prioritized seismic processing challenges
Topics will include
- A comprehensive framework for all the preprocessing and processing methods being developed within M-OSRP
- Why is the logic behind the ISS methodology so elusive to many- especially to mathematicians, physicists, geophysicists and geologists- in contrast, why is the logic behind indirect methods and model matching so accessible?
- Why solving a forward problem in an inverse sense (model matching, AVO, FWI) is not the same as solving an inverse problem directly-and why does it matter?
- What are the conceptual and practical advantages of solving an inverse problem directly in terms of seismic processing and interpretation objectives- and improving drill success rates?
- What do all direct inverse methods for structural determination and amplitude analysis communicate on the role of primaries and multiples?

- What do we consider as the appropriate role for direct and indirect methods in seismic processing?
- Open issues and M-OSRP strategy and plans going forward
- Meeting adjournment

12:30 PM   Lunch

M-OSRP Annual Technical Review and Meeting Dinner at Fogo de Chao
Wednesday, June 6, 2018, at 7:00PM
(Sponsors and their guests, and all technical meeting attendees and participants are warmly invited to the Annual Dinner)