AGENDA – ROSE meeting 22-25th April 2013

Location: P1 in PTS1, S.P. Andersens veg 15, Trondheim.

Monday 22nd April

09:30 Coffee and registration
09:50 Welcome

Session 1: Rock physics

10:00 Joint elastic-electrical properties of reservoir rocks, *Angus Best*, *NERC*
10:30 Similarities and differences between static and dynamic moduli; *Rune M Holt, NTNU/ SINTEF*
10:50 Elastic dispersion derived from a combination of static and dynamic measurements; *Erling Fjær, SINTEF / NTNU*
11:10 Thomsen anisotropy parameters for unconsolidated sands under stress*; Mohammad Hossain Bhuiyan, NTNU*
11:30 Identifying sweet spots for CO_2 injection from rock physics, *Sissel Grude, NTNU*
11:50 Extended elastic impedance from a rock physics point of view – a Norwegian Sea demonstration, *Per Avseth, NTNU/Tullow Oil Norge*

12:10 **LUNCH**

13:00 Seismic characterization of shale reservoirs, *De-hua Han, University of Houston*
13:20 Temperature effects on wave velocities and compaction of shales, *Andreas Bauer, SINTEF/NTNU*
13:40 Dynamic Fluid Modulus to characterize heterogeneity of porous rock, *Quliang Yao*, *University of Houston*

Session 2: Modeling and Anisotropy

14:00 First-order ray tracing for P and S waves in inhomogeneous, weakly anisotropic media, *Ivan Psencik, Academy of Sciences of the Czech Republic*
14:20 Modeling of transmitted and reflected waves in layered media*, Anastasiya Tantsereva, NTNU*
14:40 Double-diffraction approximation of the feasible Green's function in geometrical shadow zones, *Alena Ayzenberg, NTNU*

15:00 **Coffee break**

15:20 The offset-midpoint pyramide in TTI media, *Qi Hao, NTNU*
15:40 Upscaling in high-contrast media with application on TTI, *Alexey Stovas, NTNU*

Session 3: Time lapse and reservoir characterization

16:00 Ice scours as trapping mechanism for shallow gas, *Kjetil Haavik, NTNU*
16:20 Combining a simplified flow equation and 4D seismic traveltime shifts for pressure and saturation predictions, *Sandra Witsker, NTNU*
16:40 Dynamic time warping - an improved method for time shift estimation?*, Jon Marius Venstad, NTNU*

19:00 Dinner, Palmehaven, hotel Britannia, Dronningens gt. 5

Tuesday 23rd April

09:00 4D time lapse in complex media: a fast track approach, *Pierre Thore, Total*
09:20 Bayesian inversion methods for reservoir properties estimation from seismic data *Dario Grana, Stanford University*
09:40 Discrimination between pressure and fluid saturation changes in compacting reservoirs using time-lapse amplitudes and travel time information, *Tuhin Bhakta, NTNU*

10:00 **Coffee break**

10:30 Time lapse refraction analysis – status and future applications, *Martin Landrø, NTNU*
10:50 Temperature and pressure measurements in CO2 wells, *Anders Kiær, NTNU*
11:10 Sensitivity analysis of 4D full waveform inversion, *Hadi Balhareth, NTNU*
11:30 Influence of frequency and saturation on AVO attributes in partially saturated rocks, *Bastien Dupuy, NTNU*

12:00 LUNCH

Session 4: Imaging and inversion

13:00 Combined Full waveform inversion and wave tomography, *Børge Arntsen, NTNU*
13:20 Seismic interferometry and beyond, *Kees Wapenaar, TUDelft*
13:40 Seismic waves acquired on a frozen surface, *Tor Arne Johansen, University of Bergen*
14:00 **Coffee break**

14:30 Role of illumination in the context of seismic while drilling, *Yi Liu, NTNU*
14:50 Reverse-time demigration using the extended imaging condition, *Wiktor Waldemar Weibull, NTNU*
15:10 Elastic time-lapse full waveform inversion, *Espen Raknes, NTNU*
15:30 3D magnetotelluric inversion, *Lutz Mutschard, NTNU*
15:50 Signal and travel-time parameter estimation using signal-to-noise energy ratio, *Bjørn Ursin, NTNU*
15:50 Discussion and adjourn

24th -25th April: Course on seismic acquisition, P1, 8:30 ***Martin Landrø, Lasse Amundsen and Thomas Elboth. (course description on next page). Course ends at 17:00 25th April***

MARINE SEISMIC ACQUISITION COURSE ROSE consortium meeting

Lectures: Martin Landrø, Lasse Amundsen and Thomas Elboth; 2 lecture days: 24-25th April 2013, aud. P1, S.P. Andersens veg 15A

DAY 1:

Module 1 The marine seismic source (Martin Landrø)

- Air gun arrays, air gun modeling, clusters
- The source signature and how to estimate it
- Why is it so difficult to generate very low frequencies?
- Multiple source depths

Module 2 Deghosting (Lasse Amundsen)

- Formulas for pressure and particle velocities in the water column
- Ghosts and their effect on seismic resolution
- Wavefield separation and de-ghosting techniques (principles)

Module 3 Marine receiver systems (Martin Landrø)

- Conventional streamers
- 4C seismic: Cables, nodes, fiber optics
- Noise aspects: Ambient, weather, shot generated, vessel, interference ++…
- New trends and future perspective

Module 4 Acquisition of time lapse seismic data (Martin Landrø)

- Repeatability, repeatability, repeatability, or simply knowing where and when you measure the wave field?
- Permanent, OBN, OBC, …

DAY 2:

Module 5 Broadband seismic (Martin Landrø, Lasse Amundsen)

- Why low frequencies are important
- Various techniques
- Examples

Module 6 Environmental aspects (Martin Landrø, Lasse Amundsen)

- Marine life
- High frequency components
- Attenuation of noise level in water column

Module 7 Attenuating various types of noise from marine seismic data (Thomas Elboth)

- Swell noise, turbulence noise and environmental noise seen in streamer data
- Using superhydrofobic materials in streamer design
- Removing seismic interference noise

Daily time plan:

08:30	**Lecture**	**13:15**	**Lecture**
10:15	**Coffee**	**15:00**	**Coffee**
10:30	**Lecture**	**15:15**	**Lecture**
12:15	**Lunch**	**16:30**	**End**