Welcome

SKUA-GOCAD User Group Meeting
February 10, 2015
Emmanuel Gringarten
SKUA-GOCAD release roadmap

P14.1  
Sept 2014

Fault auto picking  
IM Revamp

Structural Uncertainty

Compartments

Bivariate Analysis

Microseismic

Macros

P15  
April 2015

RESQML2  
Petrel Connector

FSG Overturned Structures

Variogram Analyzer

Production Data
P14.1 - Interpretation Modeling

Auto-Fault Picking → Auto Volume Picking → Structural Framework

Paleo Space ← Geologic Time ← Detailed Grid Layering
P14.1 - Structural Uncertainty
P14.1 - Compartmentalization
P14.1 – Bivariate Analysis

Impedance Volume + Well Porosities

Porosity = f(Impedance)

Porosity Trend + Residual Logs

Simulated Porosity Residuals

Final Porosity
P14.1 - Microseismic Analysis

Data Loading
- Events and Attributes
- Pumping and Production data

Time animation, display and filtering
- Time window animation
- Location/Attribute filtering

Fracture Interpretation
- Estimate fracture shapes
- Compute stimulation path

Time Variable MRV
- Microseismic Density
- Upscaled attributes
- MRV Sensitivity Analysis

Data courtesy of MSI inc
P14.1 – Macros

Record commands

Build Macro Flow
DnD from recorded commands, add flow controls

Tag parameters
Double click any command to access tagging UI

Run Macro
UI to enter new values for variables
• Maintenance and Stability
  - Velocity and T/D conversion
  - Production data loading optimization

• Improvements
  - Flow Grids for Overturned Structures
  - Variogram Analyzer enhancements
  - Production plotting
  - Macros enhancements
  - Petrel Connector: 2-way transfer of data
P15 - Variogram Analyzer

- Guided UI adapted for both novice and advanced users
- Smart defaults for experimental variogram computation
- Automatic variogram fitting
- Variogram Map to determine major direction
- Better Plots
- Easier Interactive Modeling

New Variogram Analyzer Interface
P15 - Production Data Plotting

- Added data formats (IHS, OBSH)
- Optimized plots display and usability
- Update displayed data on the fly

“Display element” for production data Plot window
P15 - RESQML 2.0 Import/Export

• Import/Export to RESQML 2.0
• Petrel plugin to Import/Export RESQML 2.0

SKUA-GOCAD:

Supported Items: Surveys, Horizons, Fault sticks, Well path/trajectory, logs, markers, Stratigraphic Grids
Agenda - Morning

- **9:00 – 9:30** Welcome and Review of 2014
- **9:30 – 10:00** Paradigm Demo: Interpretation Modeling  
  *Building Robust Reservoir Models through Automated Seismic Interpretation*  
  Bruno De Ribet
- **10:00 – 10:30** Case Study 1: Chevron North America E&P  
  *Uncertainty Reduction in Fracture Characterization Using Dynamic Data*  
  Carlos Collantes
- **10:30 – 10:45** Coffee Break
- **10:45 – 11:15** Case Study 2: Calpine Corporation  
  *3D Structural Model Building for Refined Geothermal Field Development and Induced Seismicity Mitigation; The Geysers, Northern California*  
  Craig Hartline
- **11:15 – 11:45** Case Study 3: Shell Global Solutions  
  *Using SKUA in Shell – Geosigns – Elaine Babb*
- **11:45 – 12:15** Case Study 4: EMZED Exploration  
  *Combining Interpretation with Modeling to Improve Subsurface Uncertainty Estimation*  
  Damien Thenin
- **12:15 – 1:15** Lunch & Open Discussion
# Agenda - Afternoon

<table>
<thead>
<tr>
<th>Time</th>
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| 1:15 – 1:45 | **Paradigm Demo: Microseismic**  
*Microseismic Data Analysis in SKUA-GOCAD*  
Hassane Kassouf |                     |
| 1:45 – 2:15 | **Case Study 5: Chevron Petroleum Technology**  
*Modeling a Complex Structure for Static Volume Assessment*  
Anne Dutranois |                     |
| 2:15 – 3:00 | **Case Study 6: Mira Geoscience**  
*The Geophysical Model Builder Plug-in: Providing Survey Design and Interpretation Framework for EM and other Non-Seismic Geophysical Methods*  
Gervais Perron |                     |
| 3:00 – 3:15 | **Coffee Break**  |                     |
| 3:15 – 3:45 | **Paradigm Demo: Facies Modeling**  
*Systematic Approach to Facies Data and Trend Analysis*  
Aymen Haouesse |                     |
| 3:45 – 4:15 | **Paradigm Demo: Macros**  
*Automate Tasks Using Macros in SKUA-GOCAD*  
Aymen Haouesse |                     |
| 4:15 – 4:30 | **Feedback & Closing Remarks** |                     |