

The Geology of Geomechanics

Wednesday 28 and Thursday 29 October 2015

Programme

Day 1

| | |
|-------|--|
| 09.00 | Registration, Tea and Coffee |
| 09.20 | Opening Remarks |
| 09.30 | KEYNOTE: Musings about earth signals including microseismic events before and during high volume hydraulic fracturing of gas shale Terry Engelder (Pennsylvania State University, USA) |
| 10.00 | Pore Pressure – Stress Coupling: Evidence from deep boreholes Richard Swarbrick (Geopressure Consultancy and University of Durham, UK) |
| 10.20 | Does geological and mechanical stratigraphy determine minimum and maximum horizontal stress? Jorg Herwanger (Ikon Science, UK) |
| 10.40 | Posters - introduced by authors/presenters |
| 11.00 | Tea and Coffee Break |
| 11.30 | Mechanical constraints on kink band and thrust development in the Appalachian plateau Paul Gillespie (Statoil, Norway) |
| 11.50 | Active Low Angle Normal Faults in Deep-Water Santos Basin, Offshore Brazil: A geomechanic analogy between salt tectonics and crustal deformation Marcos Fetter (Petrobras E&P, Brazil) |
| 12.10 | To Seep or not to Seep? A comparison of CO₂ bearing reservoirs in Italy Jen Roberts (University of Strathclyde, UK) |
| 12.30 | Posters - introduced by authors/presenters |
| 12.50 | Lunch and Poster Session |
| 14.00 | Temporal Evolution of Fault Architecture and Diagenesis: Coupling between fault development and fluid flow Zoe Shipton (University of Strathclyde, UK) |
| 14.20 | Driving Mechanisms for Regional Opening-Mode Fracture Systems: Insights from fluid inclusion microthermometry of crack-seal fracture cements Joe English (Petroceltic, Ireland) and Stephen Laubach (University of Texas, USA) |
| 14.40 | Clumped isotope thermometry: A tool to further detail fluid processes in fault zones, a view from the South Pennine Orefield, Peak District, UK Daniel Myhill (University of East Anglia, UK) |
| 15.00 | Strength recovery and vein growth during self-sealing of faults in Westerly granite Philip Meredith (University College London, UK) |
| 15.20 | Tea and Coffee Break |
| 15.50 | KEYNOTE: Challenges of Incorporating Geology in Geomechanical Models Julia Gale (University of Texas, USA) |
| 16.20 | Integrating Microseismicity and Rock Mechanics in Shale Gas Development: Lessons for the UK Rob Westaway (University of Glasgow, UK) |
| 16.40 | Load Transfer, Chemical Compaction, Seepage Forces and Horizontal Hydrofractures within Mature Source Rocks: Evidence from theory, physical models and geological examples Alain Zanella (CNRS and Université de Rennes, France) |
| 17.00 | Simulation of Geomechanical History: Contributions to petroleum geoscience illustrated by examples from Brazil and Trinidad Tim Harper (Geosphere Ltd, UK) |
| 17.20 | Some Stressful Realisations about the Concept of Stress in Geomaterials Gary Couples (Institute of Petroleum Engineering, UK) |
| 17.40 | Drinks Reception and Book Launch <i>Ground Breakers: The story of oilfield technology and the people who made it happen</i> presentation by Andrew Gould, Chairman BG-Group |

Day 2

| | |
|-------|--|
| 08.45 | Registration, Tea and Coffee |
| 09.10 | KEYNOTE: The Edge of Failure: Critical stress-overpressure states in different tectonic regimes Richard Sibson (University of Otago, New Zealand) |
| 09.40 | The Role of Fluid Pressure in Frictional Stability and Earthquake Triggering: Insights from rock deformation experiments Cristiano Collettini and Marco Scuderi (Università di Roma and Istituto Nazionale di Geofisica e Vulcanologia, Italy) |
| 10.00 | Faulting and Friction of Sandstones Abigail Hackston and Ernest Rutter (University of Manchester, UK) |
| 10.20 | ¿Cómo se lava? How representative are “typical lavas” in volcano stability models? Alodie Bubeck (Cardiff University, UK) |
| 10.40 | Posters - introduced by authors/presenters |
| 11.00 | Tea and Coffee Break |
| 11.30 | KEYNOTE: Geomechanical Engineering in Field Development Planning and the Impact of Geological Uncertainties Tony Addis (Baker Hughes, UK) |
| 12.00 | Hydraulic fracture design in tight hydrocarbon reservoirs using coupled geomechanical – porous flow simulation with adaptive remeshing Matthew Profit (Rockfield Software Ltd, UK) |
| 12.20 | High-resolution 3D structural geology and geomechanical modelling at well sector scale for hydraulic fracturing Jean Desroches (Schlumberger, USA) |
| 12.40 | Posters - introduced by authors/presenters |
| 13.00 | Lunch and Poster Session |
| 14.00 | KEYNOTE: The Present-Day Stress Field in Sedimentary Basins Mark Tingay (Chevron and University of Adelaide, Australia) |
| 14.30 | Contemporary stresses from petroleum exploration data and neotectonic structures in southeastern Australia: Can geology and geomechanics be reconciled? Simon Holford (University of Adelaide, Australia) |
| 14.50 | Stress Distribution, Mechanical Stratigraphy and Basement Structure in the Bowen and Surat Basins (Australia): Implications for coal reservoir performance Thomas Flottmann (Origin Energy, Australia) |
| 15.10 | Reservoir Characterisation by Integration of Outcrop Analog with <i>In Situ</i> Stress Profiling of a Fractured Carbonate Reservoir Jon Gutmanis (Geoscience Ltd, UK) |
| 15.30 | Tea and Coffee Break |
| 16.00 | Case Studies of the Complex Relationship of Geology and Geomechanics in the Eocene Formations in Quad 9 and Quad 15 based on 30 years' experience Tony Batchelor (Gesocience Ltd, UK) |
| 16.20 | Predicting Sub-Seismic Fracture Density and Orientation: A case study from the Gorm Field, Danish North Sea Brett Freeman (Badley Geoscience, UK) |
| 16.40 | The Chalk Reservoir of the Ockley Accumulation (Licence Block UKCS 30/1): In-situ stresses, natural fractures and implications for stimulation Tim Wynn (AGR TRACS International, UK) |
| 17.00 | Integration of Geology and Geomechanics in Carbonate Fields: From exploration to production Josephine Wheeler (BG Group, UK) |
| 17.20 | Closing Remarks |
| 17.30 | Conference End |