

EAGE

EUROPEAN
ASSOCIATION OF
GEOLOGISTS &
ENGINEERS



FAULT&TOPSEALS

PALERMO • 2019

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**FIFTH INTERNATIONAL CONFERENCE
ON FAULT AND TOP SEALS
8-12 SEPTEMBER 2019 • PALERMO, ITALY**

**FINAL ANNOUNCEMENT
& PROGRAMME**

WWW.FAULTANDTOPSEALS2019.ORG

ABOUT THE CONFERENCE

This is now the fifth EAGE conference to be held about fault and top seal analysis. All of the past conferences have been highly successful in bringing together scientists from different industries (petroleum, CO₂ storage and radioactive waste disposal) and academia, with a wide range of backgrounds (geology, petroleum engineering, petrophysics, geophysics, modelling, geomechanics and geochemistry) to share experiences in this field.

Predicting the behavior of fault and top seals remains a major uncertainty not just in the exploration, appraisal and production of conventional petroleum reservoirs but also in areas such as gas (methane and CO₂) storage and radioactive waste disposal. It is vital that we continue to share experiences of both successful and unsuccessful applications of fault and top seal analysis so that we can adapt our working practices in order to reduce this uncertainty. Fault and top seal analysis requires a thoroughly multidisciplinary approach and the organizing committee will continue the tradition of ensuring that this is reflected in the oral and poster presentations.

AIM OF THE CONFERENCE

The objective of the conference is to provide a forum to share our experiences (technical and organizational) in fault and top seal analysis, propose solutions and discuss research approaches to resolve some of our outstanding technical challenges.

Fault and top seal analysis of conventional reservoirs remains a key uncertainty. There is now more focus on issues such as fault analysis in carbonate reservoirs, seals to unconventional reservoirs and seal analysis for CO₂ storage sites. For this reason, this conference is eager to address these issues, which did not obtain much in past events.

Fault and top seal analysis requires a multidisciplinary, evidence-based approach. For this reason, we are keen to attract case studies as well as presentations that cover the range of approaches required for successful seal analysis (i.e., laboratory, modelling, interpretation of static and dynamic data, among others). It is often the case that different industries approach seal analysis in different ways, for this reason, the conference aims to bring together people working not only on petroleum-related issues but also those working in areas such as hydrology, waste disposal and gas storage.

“It is vital that we continue to share experiences of both successful and unsuccessful applications of fault and top seal analysis so that we can adapt our working practices in order to reduce this uncertainty”

TECHNICAL COMMITTEE

Alexandra Amann-Hildenbrand	University of Aachen
Giovanni Bertotti	TU Delft
Russell Davies	Schlumberger
Steve J. Davis	ExxonMobil
Stephen Dee	BP
David Dewhurst	CSIRO
Ewart Edwards	ZADCO
Thiago Falcão	Petrobras
Quentin Fisher*	University of Leeds
Claude Gout	Total
Neil T. Grant	ConocoPhillips
Ieva Kaminskaite	University of Leeds
Robert Locklair	Chevron
Irene Mannino	Eni
Marco Meda	Eni
Emma Michie	Badley Geoscience Ltd
Titus Murray	Southern Highlands Structural Geology
Tim Needham	Needham Geoscience
Frauke Schaefer*	Wintershall Dea
John Solum	Shell
Emanuele Tondi	University of Camerino
Robert Worthington	Equinor
Graham Yielding	Badley Geoscience Ltd

*Co-chairs

LOCATION

Palermo, Italy

Palermo is a city of Southern Italy, the capital of both the autonomous region of Sicily and the Metropolitan city of Palermo. This 2,700 year old city is noted for its history, culture, architecture and gastronomy, playing an important role throughout much of its existence. Palermo is located in the northwest of the island of Sicily, right by the Gulf of Palermo in the Tyrrhenian Sea.

Venue

NH Hotel Palermo
 Foro Italico Umberto
 90133 Palermo, Italy



CONFERENCE OVERVIEW

8 September 2019	Icebreaker Reception
9 September 2019	Technical Programme
10 September 2019	Technical Programme + Conference Dinner
11 September 2019	Technical Programme
12 September 2019	Field Trip

IMPORTANT DATES

Early Registration Deadline	31 July 2019
Late Registration Deadline	5 September 2019
Fault & Top Seals Conference	8-12 September 2019

TECHNICAL PROGRAMME

Sponsored by



ExxonMobil

Oral Presentations | Monday 9 September 2019

08:00	Registrations & Welcome Coffee
CONFERENCE ROOM	
08:20	Opening & Welcome Address
Risk I	
Q. Fisher (University of Leeds), F. Schaefer (Wintershall Dea)	
08:30	Keynote Lecture 1 - Seal Risking Reinvented Using 300 Year Old Math - J.S. Davis ^{1*} , K.C. Hood ¹ , K.J. Steffen ¹ , J.M. Matthews ¹ ¹ ExxonMobil Upstream Integrated Solutions Co.
09:05	MoFTS01 - Defining Fault Trap Leakage Pathways via Fault Element Seal Differentiation in Calibration Modelling of Complex Fields - M. Smith ^{2*} , J. Parsons ¹ ¹ Quantiseal Pty Ltd; ² Karoon Energy Ltd
09:30	MoFTS02 - Incorporating Uncertainty into Fault Seal Analysis - R. Davies ^{1*} , D. Povey ¹ , P. Wilson ¹ , S. Harris ¹ , R. Knipe ² ¹ Schlumberger; ² University of Leeds
09:55	MoFTS03 - Understanding the Dynamic Impact of Fault Models Using Fault Properties and Simple Streamline Simulations - P. Wilson ^{1*} , S. Smith ¹ , D. Povey ¹ , S. Harris ¹ , R. Davies ² ¹ Schlumberger Oilfield UK PLC; ² Schlumberger Technology Corporation
10:20	Coffee Break / Poster Session 1
Risk II	
R. Davies (Schlumberger), T. Murray (Southern Highlands Structural Geology)	
10:50	Keynote Lecture 2 - Incorporating Ambiguity and Uncertainty into Subsurface Model Building - J. Solum ^{1*} , K. Onyeagoro ¹ ¹ Shell International Exploration and Production, Inc.

11:25	MoFTS04 - Fault Gouge Seal Models: Sensitivity Study of Petrophysical Inputs - R. Locklair ^{1*} , M. Ascanio Regalado ¹ , A. Eakin ¹ , J. Gage ¹ ¹ Chevron
11:50	MoFTS05 - A New Method of Accounting for Uncertainty and Temporal Variability in Studies of Fault Seal Capacity - C. Reilly ^{1*} , M. Valcarcel ¹ ¹ Petroleum Experts Ltd
12:15	MoFTS06 - How to Consider Uncertainties in FSA: A-Posteriori Correction and Montecarlo Workflows for Hydrocarbon Column Height Evaluation - M. Meda ^{1*} , L. Clemenzi ¹ ¹ Eni S.P.A.
12:40	Lunch Break
Fault Seal Case Studies E. Michie (Badley Geoscience Ltd), R. Worthington (Equinor)	
13:40	MoFTS07 - Validation of Fault Seal Mechanisms in the Timor Sea: An Outcrop and Subsurface Perspective - T. Murray ^{1*} , W. Power ² , S. Sosio de Rosar ³ , Z. Shipton ³ , R. Lunn ³ ¹ Southern Highlands Structural Geology; ² Power Geoscience; ³ University of Strathclyde
14:05	MoFTS08 - Sub-Seismic Deformation in Traps Adjacent to Salt Stocks/Walls: Observations from Green Canyon, Gulf of Mexico - S. Wilkins ^{1*} , V. Mount ¹ , R. Davies ² , T. Butaud ¹ , B. Lindsey ¹ , C. Fenn ¹ , J. Syrek ¹ , H. Adiguna ¹ , I. Matthews ¹ ¹ Anadarko Petroleum Corp.; ² Schlumberger
14:30	MoFTS09 - Depth-Dependent Fault Sealing in the Greater Oseberg Area - C. Hermanrud ^{1,2*} , G.M.G. Teige ¹ , T. Lien ³ , M.O. Osnes ¹ ¹ Equinor; ² University of Bergen; ³ AkerBP
14:55	MoFTS10 - Fault Seal Prediction and Production Experience. Fault Behavior in Upper Jurassic Sands, Halten Terrace - S. Ottesen ^{1*} , H.S. Solli Fossmark ¹ , R. Worthington ¹ , J. Van Hagen ² , N. Fredman ¹ ¹ Equinor ASA, TPD R&T; ² Equinor ASA, DPN OTE
15:20	Coffee Break / Poster Session 1
Petroleum Trapping M. Meda (Eni), Q. Fisher (University of Leeds)	
15:50	Keynote Lecture 3 - Petroleum Migration and Entrapment: The Role of Pores, Fractures and Faults - A. Pepper ^{1*} ¹ This Is Petroleum Systems
16:25	MoFTS11 - Validation of the Membrane Seal Capacity Workflow Using a Case Study and MICP Database - S. Martinez ^{1*} , T. Harrold ¹ , G. Saceda ¹ , K. Meyer ¹ ¹ Repsol
16:50	MoFTS12 - Modelling how Faults Influence the Trapping of Oil & Gas - N. Grant ^{1*} ¹ ConocoPhillips UK Ltd.
17:15	Discussion
17:40	End of Day 1

Poster Presentations

Monday 9 September 2019

POSTER AREA

Coffee Break / Poster Session 1

MoP01 - Top Seal Membrane Capacity Prediction: A Practical Workflow for Exploration - G. Saceda Corralo^{1*}, T. Harold¹, S. Martinez¹, A. Vayssaire¹
¹ Repsol

MoP02 - Evolution of Clay-Gouge Volume and Sealing Capacity during Fault Growth Insight from Present and Paleo Oil-Column - X. Song^{1*}, L. Meng¹
¹ College of Earth Science, Northeast Petroleum University

MoP03 - Closing the SeAM - Linking Seal Analysis and Mechanics to Improve Fault Stability Prediction - M. Kettermann^{1*}, V. Schuller², A. Zamolyi², M. Persaud², B. Grasemann¹
¹ Department of Geodynamics and Sedimentology, University of Vienna; ² OMV E&P

MoP04 - A Review of Fault Modelling Approaches - A.E. Lothe^{1*}, B.U. Emmel¹, A. Lavrov¹, P.R. Cerasi¹
¹ SINTEF Industry

MoP05 - An Empirical Approach to Reduce Uncertainty when Predicting Hydrocarbon Column Heights during Prospect Evaluation - I. Edmundson^{1*}, R. Davies², L. Frette³, E. Kavli⁴, A. Rotevatn¹, A. Dunbar²
¹ University of Bergen; ² Wintershall Dea; ³ Cairn Energy; ⁴ IFP School

MoP06 - Shale Smear Geometries and Implications for Fault Seal: An Outcrop Study from Mt Messenger, New Zealand - G. Watson^{1*}, A. Nicol¹, H. Winter¹, C. Childs²
¹ University of Canterbury; ² University College Dublin

MoP07 - Investigation of Cap Efficiency of Upper Red Formation in the Southern Semnan Using Surface Geochemistry - A. Hosseini¹, M.H. Saberi^{1*}
¹ Semnan University

MoP08 - Observations on Hanging-Wall Traps that Are Dependent on Fault-Rock Seal - P. Bretan^{1*}, G. Yielding¹, E. Sverdrup²
¹ Badley Geoscience Ltd; ² MOL Norge AS

MoP10 - Fault Zone Evolution and Architecture in Siliciclastic Turbidites and their Impact on Hydraulic Behaviour - H. Riegel¹, T. Volatili^{1*}, D. Jablonska¹, C. Di Celma¹, F. Agosta², L. Mattioni³, E. Tondi¹
¹ University of Camerino; ² University of Basilicata; ³ Neptune Energy International S.A.

MoP11 - Effect of Shale Volume on the Porosity of Clastic Reservoirs. Case-Study From Mkuki-1 Reservoir, Offshore Tanzania - D.E. Mbagala^{1*}, G. Mwendenusu¹
¹ University of Dar es Salaam

MoP12 - Fault Growth and Linkage: Implications for Trap Integrity Associated with Fault Reactivation in the Qinan Slope, Huanghua Depression of Bohai Bay, China - H. Wang^{1*}, L. Meng¹, X. Fu¹, R. Chu¹, T. Wu¹, S. Wang¹
¹ Northeast Petroleum University

MoP13 - Gas Physical Properties and their Implication on Gas Saturation and Leakage in Deep Reservoirs- A Case Study of Cambrian Gas Field, Sichuan Basin, China - H. Tian^{1*}, X. Lu¹, J. Fan¹, X. Ma¹, S. Liu¹, C. Zou¹
¹ PetroChina

MoP14 - An Integrated Calibration Method of Fault-Seal Capacity in Sand-Clay Sequences: Mechanisms, Principles, and Potential Pitfalls - L. Meng^{1*}, X. Fu¹, H. Wang¹, X. Song¹, Z. Liu¹, B. Liu¹
¹ Northeast Petroleum University

MoP17 - The Influence of Fault Membrane Seal on Hydrocarbon Migration and Accumulation in the South Sesulu - I. Lubis^{1*}, H. Haryanto¹, L. Gultom¹, R. Sipayung², G. Fauzi²
¹ Saka Indonesia Pangkah Limited; ² PetroPro

Oral Presentations

Tuesday 10 September 2019

08:00	Registrations & Welcome Coffee
CONFERENCE ROOM	
Laboratory Investigations I D. Dewhurst (CSIRO), S. Dee (BP)	
08:30	Keynote Lecture 4 - Sealing Properties of Tight Rocks – Experimental Challenges - A. Amann ^{1*} ¹ RWTH Aachen University
09:05	TuFTS01 - New Measurements of the Petrophysical Properties of Top and Fault Seals - Q. Fisher ^{1*} , C. Grattoni ² , S. Allshorn ² , P. Guise ² ¹ Petriova Ltd; ² University of Leeds
09:30	TuFTS02 - Clay Smear: How Predictive Will we Ever Be? Insight From Sandbox Models and Seismic - P.D. Richard ^{1*} , J. Urai ² ¹ Shell International E&P BV; ² RWTH Aachen University
09:55	TuFTS03 - Influence of Host Rock Lithology Contrast on Permeability Reduction in Fault Zones (Vienna Basin, Austria) - T. Schröckenfuchs ^{1*} , V. Schuller ¹ , A. Zamolyi ¹ ¹ OMV Exploration & Production GmbH
10:20	Coffee Break / Poster Session 2
Laboratory Investigations II R. Locklair (Chevron), N. Grant (ConocoPhillips)	
10:50	TuFTS04 - Laboratory Investigations of the Properties of Volcanic Ash Seals - T. Vanorio ^{1*} , J. MacFarlane ¹ , A. Clark ¹ ¹ Stanford University
11:15	TuFTS05 - Visualising Hydraulic Fractures in Bedded and Fractured Shales: A Series of Analogue Experiments - A. Wiseall ^{1*} , R. Cuss ¹ , E. Hough ¹ ¹ British Geological Survey
11:40	TuFTS06 - Textural Controls on the Permeability and Structure of Fault Zones in Shallow Burial Limestones, Malta - A. Cooke ^{1*} , Q. Fisher ¹ , E. Michie ² , G. Yielding ² ¹ University of Leeds; ² Badley Geoscience Ltd.
12:05	TuFTS07 - Impact of Laboratory-Induced Deformation and Naturally-Occurring Faults on Fluid Flow in Carbonates - I. Kaminskaitė ^{1*} , Q.J. Fisher ¹ , E.H. Michie ² ¹ University of Leeds; ² Badley Geoscience Ltd
12:30	Lunch Break
Novel Use of Geophysics for Seal Analysis S. Davis (ExxonMobil), S. Wilkins (Anadarko Petroleum Corp.)	
13:30	TuFTS08 - Integrated Assessment of InSAR and Passive Seismic Monitoring, Addressing Caprock Integrity within a SAGD Project - C. Hindriks ^{1*} , S. Azri ² , K. Bisdorn ¹ ¹ Shell Global Solutions International BV; ² Petroleum Development Oman
13:55	TuFTS09 - Fault Architecture, an Integrated Study - A. Torabi ^{1*} , B. Alaei ² , A. Libak ³ ¹ University of Oslo; ² Earth Science Analytics AS; ³ OCTIO Gravitude
14:20	TuFTS10 - Top Seal Understanding by Integrating 3D Resistivity with Seismic and Wells: Lessons from Gulf of Mexico - V. Ricoy-Paramo [*] , F. Roth
14:45	TuFTS11 - Seismic Fault Damage Zone Characterisation for Reservoir Modelling Using Advanced Attribute Analysis - C. Botter ^{1*} , A. Champion ² ¹ Institute of Applied Geoscience, University of Leeds; ² CGG

15:10 Coffee Break / Poster Session 2

Fault Seal in Storage and Disposal

C. Gout (Total), F. Schaefer (Wintershall Dea)

15:40	Keynote Lecture 5 - Fault Zone Hydrogeology in Near-Surface Landscapes in Australia: Geodynamic and Tectonic Influences - K. Lawrie ^{1*} , T. Murray ² , R.S. Brodie ¹ , M. Sandiford ³ , L. Halas ¹ ¹ Geoscience Australia; ² Southern Highlands Structural Geology; ³ University of Melbourne
16:15	TuFTS12 - Strain and Flow Pathways in a Shale Fault Zone: An In-Situ Test of Fault Seal Integrity - P. Henry ^{1*} , Y. Guglielmi ³ , C. Gout ² , R. Castilla ² , P. Dick ⁶ , F. Donzé ⁷ , A. Tsopela ⁷ , D. Neyens ⁵ , L. De Barros ⁹ , J. Durand ⁴ ¹ Aix Marseille Univ, CNRS, IRD, INRA, Coll France, CEREGE; ² Total, Jean Féger Scientific and Technical Center; ³ Lawrence Berkeley National Laboratory, Energy Geoscience Division; ⁴ SITES S.A.S., Espace Européen; ⁵ ImaGeau; ⁶ IRSN, LETIS; ⁷ Université Grenoble Alpes, 3SR; ⁸ Université Côte d'Azur, CNRS, Observatoire de la Côte d'Azur, IRD, Géoazur
16:40	TuFTS13 - Significance of Fault Seal in Assessing CO₂ Storage Capacity and Leakage Risks - An Example from Offshore Norway - L. Wu ^{1*} , R. Thorsen ¹ , P. Ringrose ¹ , S. Ottesen ¹ , K. Hartved ¹ ¹ Equinor
17:05	Discussion
19:00	Conference Dinner
22:00	End of Day 2

Poster Presentations

Tuesday 10 September 2019

POSTER AREA	
Coffee Break / Poster Session 2	
TuP01	Numerical Simulation of Fault Compartmentalisation in CCS Reservoir - L. Langhi ¹ , L. Ricard ¹ , J. Strand ¹ , D. Dewhurst ^{1*} ¹ CSIRO Energy
TuP02	The CO₂ CRC Otway Controlled CO₂ Release Experiment in a Fault: Geomechanical Characterisation Pre-Injection - E. Tenthorey ^{1,2*} , A. Feitzl ² , A. Credo ² , M. Laviña ⁴ , E. Coene ⁴ , A. Idiart ⁴ , S. Jordana ⁴ ¹ Geoscience Australia; ² CO ₂ CRC; ³ Total S.A.; ⁴ Amphos21 Consulting S.L.
TuP03	Realtime Locating Injection-Induced Microseismicity Using Amplitude Stacking and Waveform Correlation - C. Zhang ^{1*} , W. Qiao ¹ , X. Che ¹ , J. Lu ¹ , B. Men ¹ ¹ China University of Petroleum (Beijing)
TuP04	Enhanced Core Analysis of the Callovo Oxfordian Claystone as a Host Rock for Nuclear Waste Disposal - T. Lhomme ^{1*} , C. Germy ¹ , S. Minici ² , G. Fillon ² , N. Conil ³ , R. De La Vaissiere ³ , C. Righini-Waz ³ ¹ EPSLOG; ² Fugro-Geoter; ³ ANDRA
TuP05	Sealing, Healing and Fluid Flow in Clay Rocks: Insights on Episodic Flow Events in Fault Zones - V. Nenonen ¹ , P. Dick ^{2*} , J. Sarmaljärvi ¹ , B. Johansson ³ , M. Voutilainen ¹ , M. Siitari-Kauppi ¹ ¹ Laboratory of Radiochemistry, University of Helsinki; ² IRSN; ³ Geological Survey of Finland (GTK)
TuP06	Effects of Cap Rock and Hydrodynamic on CBM Preservation A Case Study From Ordos Basin, China - X. Ma ^{1*} , S. Liu ¹ ¹ Research Institute of Petroleum Exploration & Development, Petrochina
TuP07	Diagenetic Impact on Polyphase Fault Zones Drain Properties in Micro-Porous Carbonates (Urgonian – SE France) - I. Aubert ^{1*} , P. Léonide ¹ , J. Lamarche ¹ , R. Salardon ¹ ¹ Aix Marseille Univ, CNRS, IRD, CEREGE

TuP08 - Structural Diagenesis, Early Embrittlement and Fracture Setting in Shallow-Water Platform Carbonates (Monte Alpi Southern Apennines, Italy) - V. La Bruna ¹ , J. Lamarche ^{1*} , F. Agosta ² , A. Rustichelli ³ , A. Giuffrida ³ , R. Salardon ¹ , L. Marié ¹ ¹ University Aix-Marseille; ² University of Basilicata; ³ University of Camerino
TuP09 - Kinematic and Geological Significance of Contractional Deformation Bands in Oil-Bearing Sandstones: Example from Youshashan Anticline, China - Z. Liu ^{1,2*} , H. Wang ^{1,2} , L. Meng ^{1,2} ¹ Earth science college, Northeast Petroleum University; ² Innovation Team of Science and Technology for Tectonic Deformation Mechanism of Fault and Evaluation Technology of Effectiveness for Fault-related Trap, Northeast Petroleum University
TuP10 - Stochastic Simulation of Sub-Seismic Faults Conditioned on Displacement Intensity Maps - H. Goodwin ^{1*} , E. Aker ¹ , P. Røe ¹ ¹ Norwegian Computing Center
TuP11 - Deep Galerkin Model in Batchflow - A. Koryagin ^{1*} , S. Tsimfer ¹ ¹ Gazprom-neft
TuP13 - 3D Pore Pressure Analysis for Seal Risk Identification - N. Ordóñez Pérez ^{1*} , C. Cobos ² , F. Obregon ² , G. Zamora Valcarce ¹ ¹ Repsol Exploracion S.A.; ² Repsol Services S.L.
TuP15 - Fault Seal Analysis Using Seismic Inversions: Pitfalls and Limitations - V. Schuller ^{1*} , M. Vögele ¹ ¹ OMV E&P
TuP16 - Fault Displacement Estimation from Seismic Data Using Co-variant detectors - M. Rudzki ^{1*} , M. Łukaszeowski ¹ , T. Szulc ¹ ¹ Geofizyka Torun S.A.
TuP17 - Fracture Reactivation in Shale: Laboratory Testing and Analytical Modeling - B. Bohloli ¹ , J.C. Choi ¹ , M. Soldal ^{1*} ¹ Norwegian Geotechnical Institute

Oral Presentations

Wednesday 11 September 2019

08:00	Registrations & Welcome Coffee
CONFERENCE ROOM	
Geomechanics A. Amann-Hildenbrand (RWTH University of Aachen), T. Needham (Needham Geoscience)	
08:30	Keynote Lecture 6 - R. Cuss ¹ ¹ TBC
09:05	WeFTS01 - Advanced Geomechanical Techniques for Natural Fracture Prediction - J.C. Menescal ^{1*} , Y. Bezerra ² , J.A. Souza ¹ , A. Hussein ² , R. Plateaux ² , X. Garcia ² , T. Falcao ¹ , A. Rodriguez ² , L. Maertan ² , R. Stohler ¹ ¹ Petrobras; ² Schlumberger
09:30	WeFTS02 - Top Seal Undrained Pore Pressure Response - Sensitivity to Skempton's A - M. Duda ^{1*} , R.M. Holt ¹ , J.F. Stenebråten ² ¹ Norwegian University Of Science & Technology; ² SINTEF Industry
09:55	WeFTS03 - Impact of Fault Permeability on Geomechanical Models of CO₂ Injection in the Petrel Sub-basin, Northern Australia - D. Dewhurst ^{1*} , Y. Zhang ² , P. Schaub ² , L. Stalker ¹ ¹ CSIRO Energy; ² CSIRO Mineral Resources
10:20	Coffee Break / Poster Session 3
Carbonates I. Kaminskaite (University of Leeds), E. Edwards (ZADCO)	
10:50	Keynote Lecture 7 - A Review of Deformation Bands in Carbonates - A. Cilona ^{1*} ¹ Shell Global Solutions International B.V.

11:25	WeFTS04 - Pressure Equilibration Induced by Reactivation of Deep Carbonate Faults - M. Lesueur ^{1*} , T. Poulet ² , M. Veveakis ³ ¹ University of New South Wales; ² CSIRO; ³ Duke University
11:50	WeFTS05 - Pore Space Evolution within Carbonate Fault Rocks - F. Ferraro ^{1*} , F. Agosta ¹ ¹ University of Basilicata
12:15	WeFTS06 - Carbonate Fault Seal: How Can we Improve its Predictability? - E. Michie ^{1*} , Q. Fisher ² , B. Freeman ¹ , A. Cooke ² , I. Kaminskaite ² , G. Yielding ¹ ¹ Badley Geoscience Ltd; ² University of Leeds
12:40	Lunch Break
From Fault Zone Complexity to Risking G. Yielding (Badley Geoscience Ltd), T. Falcão (Petrobras)	
13:40	Keynote Lecture 8 - Parameterising and Modelling Sub-Seismic Fault Structure for Assessing Compartmentalisation and Juxtaposition Risk - T. Manzocchi ^{1,2*} , C. Childs ^{1,2} , V. Roche ^{1,2} , A. Heath ³ , I. Telles ^{1,4} , V. Papanikolaou ¹ , G. Camanni ¹ , M. Carneiro ^{2,1} , E. Delogkos ^{1,2} ¹ Fault Analysis Group, School of Earth Sciences, University College Dublin; ² Irish Centre for Research in Applied Geoscience (iCRAG), University College Dublin; ³ Independent Consultant; ⁴ Baker Hughes
14:15	WeFTS07 - The Three-Dimensional Geometry of Relay Zones within Segmented Normal Faults - V. Roche ^{1,2*} , G. Camanni ¹ , C. Childs ^{1,2} , T. Manzocchi ^{1,2} , J. Walsh ^{1,2} , J. Conneally ² , M.M. Saqab ³ , E. Delogkos ^{1,2} ¹ Fault Analysis Group, UCD School of Earth Sciences, University College Dublin; ² iCRAG (Irish Centre for Research in Applied Geosciences), UCD School of Earth Sciences, University College Dublin; ³ Norwegian Geotechnical Institute
14:40	WeFTS08 - Amalgamation of Silt Smears on Normal Faults at Outcrop Scale - A. Nicol ¹ , G. Watson ^{1*} , H. Winter ¹ , D. Cusack ¹ , C. Childs ² , R. Worthington ³ ¹ University of Canterbury; ² University College Dublin; ³ Equinor
15:05	WeFTS09 - Scaling of Fault Damage Zones and Implications for Naturally Fractured Reservoirs - S. Mayolle ^{1*} , R. Soliva ¹ , Y. Caniven ¹ , C. Wibberley ² , G. Ballas ¹ , S. Dominguez ¹ , G. Milési ¹ ¹ Université de Montpellier; ² Total
15:30	Coffee Break / Poster Session 3
Fault and Fluid Flow. Q. Fisher (University of Leeds), F. Schaefer (Wintershall Dea)	
16:00	Keynote Lecture 9 - Y. Guglielmi ^{1*} ¹ Lawrence Berkeley National Laboratory
16:35	WeFTS10 - Fault Leakage Rates Estimated In-Situ: Implications for Fault Seal Evaluation - C. Wibberley ^{1*} ¹ Total
17:00	WeFTS11 - DEM Modeling of Pressurized Fluid Flow within a Fault Zone in Shale Based on In-Situ Tests - F.V. Donzé ^{1*} , A. Tsopela ¹ , Y. Guglielmi ² , P. Henry ³ , C. Gout ⁴ ¹ Univ. Grenoble Alpes; ² Lawrence Berkeley National Laboratory; ³ Univ. Aix Marseille; ⁴ Total S.A.
17:25	Discussion
17:50	End of Day 3

Poster Presentations

Wednesday 11 September 2019

POSTER AREA

Coffee Break / Poster Session 3

WeP01 - The Effect of Fault Smearing on Spatial Development of Rock Water Reservoir in Zagros, Iran - A. Yassaghi^{1*}

¹ Department of Geology

WeP02 - Validation of Fault Seal Prediction Tools, a Case Study in the Permian Rotliegend, Dutch North Sea - K. Van Ojik^{1*}, A. Silvius², Z. Shipton³, Y. Kremer³

¹ EBN; ² State University Utrecht; ³ University of Strathclyde

WeP03 - In-Situ Stress and Fault Reactivation in Bozhong 34-2 Oilfield of Huanghekou Sag, Bohai Bay Basin - Y. Jin^{1*}

¹ Northeast Petroleum University

WeP04 - Fracture Stratigraphy and DFN Modelling of Tight Carbonates, the Case Study of Monte Alpi (Southern Italy) -

A. Giuffrida^{1,2*}, F. Agosta^{1,2}, P. Castelluccio¹, E. Panza^{1,2}, V. La Bruna^{2,3}, A. Rustichelli^{2,4}, E. Tondi^{2,4}, M. Eriksson⁵, S. Torrieri⁵, M. Giorgioni⁵

¹ University of Basilicata; ² Reservoir Characterization Project (www.rechproject.com); ³ CEREGE-UMR, Aix-Marseille University; ⁴ University of Camerino; ⁵ Shell Italia Exploration & Production

WeP05 - Imbricated Structure and Hydraulic Path Induced by Strike Slip Reactivation of a Normal Fault in Carbonates - I. Aubert^{1*}, J. Lamarche¹, P. Richard², P. Leonide¹

¹ Aix Marseille Univ, CNRS, IRD, CEREGE; ² Shell Global Solutions International BV

WeP06 - Static and Dynamic Fault Behaviour Interpreted Using Models, Data and Hindsight - A. Irving^{1*}

¹ Total E&P UK

WeP07 - Fault Seal Analysis (FSA): Benefits and Limitations in Recent Wintershall Drilling Projects - J. Chevallier-Messbacher^{1*}, P. Bretan²

¹ Wintershall Dea Holding GmbH; ² Badleys Geoscience Limited

WeP09 - Gas Volcanoes at Gas Fields in Western Siberia by Seismic and Drilling Data - Y. Zagorovsky^{1*}

¹ Gazprom geologorazvedka LLC & Industrial University of Tyumen

WeP10 - Assessment of Fault Sealing in the Nanbaxian Area of Qaidam Basin, Western China - Q. Li^{1*}

¹ China University of Geosciences

WeP11 - Seal Integrity in the Uplifted Basins in the Greater Hoop Area on the Northern Barents Shelf - R. Paulsen^{1*}, S. Grundvåg¹, K. Senger², E. Stueland³

¹ UiT - The Arctic University of Norway; ² UNIS - The University Centre in Svalbard; ³ OMV Norge AS

WeP12 - Effect of Crestal Faulting on Hydrocarbon Trapping and Migration in the Migrant Structure Offshore Nova Scotia - K. Martyns-Yellowe^{1*}, F. Richards¹, G. Wach¹, N. Watson²

¹ Dalhousie University; ² Atlantic Petrophysics Limited

WeP13 - A Strategic Company Approach towards Understanding Sealing Mechanisms and their Impact on the E&P Value Chain -

J. Schmitt^{1*}, F. Schaefer¹, S. Aarburg¹, J. Chevallier¹, R. Held¹

¹ Wintershall Dea

WeP14 - Integrated Seal Analysis: Case Studies from the Central and Southern North Seas, and Sureste Basin, Mexico - B. O'Sullivan^{1*}

¹ Premier Oil Plc

WeP15 - Investigation the Microstructural Properties of Gas Shales Using a Combination of X-Ray μ -CT and FIB-SEM - M. Garum^{1*}, P. Glover¹, P. Lorinczi, A. Hassanpour, M. Blunt, Q. Lin, A. Raeini

¹ University Of Leeds; ² Imperial College London

WeP16 - The Cause of Hydrocarbon through Salt in Kuqa Basin, Northwest China: Evidence from Mechanics Laboratory Results and Oil-Gas Exploration Verification - Z. Qin-Gong^{1*}

¹ PetroChina

WeP17 - The Impact of Faults on Fluid Flow in Travertine - D. Drayton^{1*}, Q. Fisher¹

¹ University of Leeds

REGISTRATION

REGISTERED AND PAID	UNTIL 31/07/2019	FROM 01/08/2019 - 05/09/2019	FROM 05/09/2019 UNTIL ON-SITE
EAGE Green Member ^{1,5}	€ 945	€ 1.045	€ 1.145
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EAGE Student Green Member ^{1,2,5}	€ 350	€ 400	€ 450
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Student	€ 375	€ 425	€ 475
Non-member ^{2,3,4}			

FIELD TRIP

+ € 195 Full rate + € 145 Student rate

All fees are in Euros (€). One Euro of your total registration fee is donated to the EAGE Green Fund.

Please note: The deadlines are following the Local Time in the Netherlands.

*Registration for the Field Trip is only possible in combination with the registration for the conference.

¹ Members please note: To qualify for the member registration fee, your EAGE membership dues for 2019 must have been paid and confirmed. The processing time for membership applications or renewals is around 10 working days.

² To qualify for the reduced student registration fee:

- Students must be enrolled in a full-time study programme at a recognized university or institute.
- The registration must be accompanied by a copy of a student ID card and/or official proof of enrolment.

³ The Non-Member fee includes EAGE membership for the remainder of 2019. This membership will be activated shortly after the conclusion of the event.

⁴ Student Non-Members cannot be older than 34 years of age (when registering).

⁵ Green membership status gives you a € 50 discount (€ 25 for students) on the Non-Member fee for each EAGE event registration; starting from Bronze status, you can benefit from an even greater reduced EAGE member registration fee.

EAGE reserves the right to cancel the event due to low participation.

All registration prices and deadlines are subject to change without notice. However, registration prices of paid registrations are guaranteed at the rate of the time of registration. Please visit the relevant event website for the up-to-date registration information.

FIELD TRIP

When: Thursday 12 September
Where: San Vito lo Capo Peninsula, Sicily, Italy

A one-day field trip is being planned to view faults in high and low-porosity carbonates in the San Vito lo Capo Peninsula, Sicily, which is located approximately 50 km west of Palermo.

The San Vito lo Capo peninsula, located at the western end of the northern coast of Sicily between Palermo and Trapani, extends in a roughly north-south direction into the southern Tyrrhenian Sea. This area represents the westernmost and most external sector of the Sicilian orogenic belt, which is composed mainly of south-verging folds and thrusts. For more details on this field trip and/or registration, please visit the event website.

SOCIAL PROGRAMME

EAGE offers you the opportunity to get to know the conference delegates in a more informal environment. Please inform us via eage.events@eage.org if you would like to join.

Icebreaker Reception

Sunday 8 September, 17:00 - 19:00 hrs
Venue to be confirmed soon.

Conference Dinner

Tuesday 10 September, 19:00 - 22:00 hrs
A Conference Dinner is being organized in the "Tonnara Florio" restaurant, which has an exceptional position overlooking the sea.

Tonnara Florio

Discesa Tonnara, 4
90142 Palermo
Italy

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