EAGE

EUROPEAN ASSOCIATION OF GEOSCIENTISTS & ENGINEERS

ECMOR XVII

17TH EUROPEAN CONFERENCE ON THE MATHEMATICS OF OIL RECOVERY

SECOND ANNOUNCEMENT & PROGRAMME

14-17 SEPTEMBER 2020 | EDINBURGH, UNITED KINGDOM

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´Innovations in digitization, artificial intelligence, and automation are creating performance and productivity opportunities for the energy sector.´

INVITATION

On behalf of EAGE and the ECMOR scientific committee, it is my pleasure to invite you to the 17th European Conference on the Mathematics of Oil Recovery - ECMOR XVII. The conference will be held from 14 to 17 September 2020 in Edinburgh, United Kingdom. The venue is the John McIntyre Conference Centre, overlooking Arthur's Seat and a few minutes' walk from the historic city centre. Edinburgh is the capital city of Scotland and has long been a centre of education, particularly in science and engineering. Edinburgh's historical and cultural attractions have made it a very popular tourist destination, attracting over one million overseas visitors each year. Since the inaugural ECMOR conference in Cambridge, UK, more than three decades ago, ECMOR has been convened every two years, gathering applied mathematicians, engineers and geoscientist from both academia and industry to discuss recent advances in the mathematics of oil recovery. The conference attracts around 250 delegates, providing various opportunities for discussions and exchange of ideas between world specialists in reservoir simulation, modelling and data integration.

Innovations in digitization, artificial intelligence, and automation are creating performance and productivity opportunities for the energy sector. Given the current economics of oil recovery, it is even more important to put mathematics and related digital technologies to good use to increase returns on investments while achieving the highest standards of safety and compliance with regulations. Expected hot topics at the ECMOR XVII includes: use of linear, non-linear, multiscale and data-driven methods for reliable production forecast; risk based optimization of oil production; cloud computing for fast and representative reservoir simulation; application of machine learning techniques for history matching and modelling of unconventional resources. In addition, we expect a high level of continued interest in many other topics including: reservoir characterization, modelling of complex physical phenomena in conventional and unconventional resources, enhanced oil recovery, pore-scale modelling, geochemistry and flow in naturally fractured media. We invite you to contribute to the technical programme, share new ideas within the stimulating atmosphere of ECMOR conferences. Selected contributions from the conference papers will be published in a special issue of the Computational Geosciences journal.

We look forward to receiving your abstracts and to seeing you in Edinburgh!

Ahmed H. Elsheikh
Chairman, ECMOR XVII

SCIENTIFIC COMMITTEE

Taoufik Ait-Ettajer	Repsol
Alberto Cominelli	Eni S.p.A.
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Ahmed Elsheikh*	Heriot-Watt University
Laurent Fontanelli	Repsol
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*Chair

ABOUT ECMOR

Every two years, the ECMOR conference gathers applied mathematicians and geoscience engineers from both academia and industry to focus on recent advances in geological and reservoir modelling. The ECMOR conferences started in Cambridge over 30 years ago and through a sequence of meetings in major European centres, continue a tradition of combining high-quality mathematical science with engineering applications. Researchers and engineers from industry, government and academia meet in an informal atmosphere to focus on key technical and mathematical challenges facing the oil industry.

ABOUT EDINBURGH

Edinburgh, the capital of Scotland and a multi award-winning city with a strong reputation as one of the most attractive destinations in the world, with an ideal mix of culture, shopping, dining, music, heritage and leisure activities. The city is one of the most exciting, vibrant and cultural places to visit in the UK where you can experience different centuries of history without even moving. Head to the bottom of the famous Royal Mile you can find the 17th century Palace of Holyroodhouse, the modern parliament building and the prehistoric extinct volcano famously known as Arthur's Seat standing proudly next to each other.

ABOUT THE VENUE

ECMOR XVII will be held at the John McIntyre Conference Centre of Edinburgh First, which has windows to some of Edinburgh's most spectacular views, ensuring a memorable occasion to all delegates. This centre is part of the University of Edinburgh and is only 20 minutes away from the centre of the city.

John McIntyre Conference Centre
Pollock Halls 18 Holyrood Park Road
Edinburgh - EH16 5AY
United Kingdom

Conference Meeting rooms:
Petland East and Petland West on the 1st Floor

CONFERENCE OVERVIEW:

Monday 14 September	Technical Programme + Networking Reception
Tuesday 15 September	Half-day Technical Programme
Wednesday 16 September	Technical Programme + Conference Dinner
Thursday 17 September	Half-day Technical Programme

REGISTRATION OPENING HOURS:

Monday 14 September	07:30 - 15:30
Tuesday 15 September	08:00 - 12:30
Wednesday 16 September	08:00 - 17:00
Thursday 17 September	08:00 - 12:30

TECHNICAL PROGRAMME

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Oral Presentations | Monday 14 September 2020

	PENTLAND EAST		PENTLAND WEST
07:30	Registration and Welcome Coffee		
09:00	Opening Remarks		
09:20	Keynote		
10:10	Coffee Break / Poster Session 1		
	Flow and Mechanics in Fractured Media I H. Hajibeygi (Delft University of Technology)		**History Matching and Production Optimization I** L.J. Durlofsky (Stanford University)
10:40	**MoA01 - Extended Finite Volume Method (XFVM) for Flow Induced Tensile Failure in Fractured Reservoirs -** A.A. Habibabadi[1], R. Deb[2]*, P. Jenny[1] [1]Institute of Fluid Dynamics, ETH Zurich; [2]Laboratory of Physical Chemistry, ETH Zürich	10:40	**MoB01 - A Robust, Multi-Solution Framework for Well Location and Control Optimization -** M. Salehian[1]*, M. Haghighat Sefat[1], K. Muradov[1] [1]Heriot-Watt University
11:05	**MoA02 - Efficient Simulation of High-Enthalpy Fractured Geothermal Reservoirs with pEDFM on Dynamic Mesh -** M. HosseiniMehr[1]*, A. Marelis[1], C. Vuik[1], H. Hajibeygi[1] [1]TU Delft	11:05	**MoB02 - The Express Method of Well-Control Optimization for the Associated Gas Recycling Process -** V. Babin[1]*, N. Glavnov[1], E. Shel[1] [1]Gazpromneft Science & Technology Center
11:30	**MoA03 - The Undrained Split Iterative Coupling Scheme in Fractured Poro-elastic Media -** T. Almani[1]*, A. Manea[1], K. Kumar[2] [1]Saudi Aramco; [2]University of Bergen	11:30	**MoB03 - Refined Ensemble-Based Method for Waterflooding Problem with State Constraints -** J. Tueros[1]*, B. Horowitz[1] [1]Federal University of Pernambuco
11:55	**MoA04 - Use of Homotopy Perturbation Method to Solve Imbibition Governing Equations in Fractured Porous Media -** O. Mohammadzadeh[1,2]*, S. Kord[3], H. Fazeli[4] [1]Schlumberger-Doll Research Center; [2]DBR Technology Centre-Schlumberger Canada; [3]Petroleum University of Technology; [4]University of Tehran	11:55	**MoB04 - Optimizing Sealing of CO2 Leakage Paths with Microbially Induced Calcite Precipitation Under Uncertainty -** S. Tveit[1]*, P. Pettersson[1], D. Landa Marban[1] [1]NORCE Norwegian Research Centre
12:20	Lunch Break		
	Flow and Mechanics in Fractured Media II R. Masson (Université Côte d'Azur)		**History Matching and Production Optimization II** R. Schulze-Riegert (Schlumberger)
13:20	**MoA05 - Novel Stabilizations for A Piecewise Constant Lagrangian Formulation of Frictional Contact Mechanics with Hydraulically Active Fractures -** A. Franceschini[1]*, N. Castelletto[2], J. White[2], R. Settgast[2], H. Tchelepi[1] [1]Stanford University; [2]Lawrence Livermore National Laboratory	13:20	**MoB05 - Consistent Formulation and Error Statistics for Reservoir History Matching -** G. Evensen[1,2]* [1]NORCE; [2]NERSC
13:45	**MoA06 - Fully-coupled Simulation of Multiphase Poromechanics in Porous Media with Embedded Fractures -** M. Cusini[1]*, N. Castelletto[1], R. Settgast[1], J. White[1] [1]Lawrence Livermore National Laboratory	13:45	**MoB06 - Selecting Representative Models for Ensemble-Based Production Optimization in Carbonate Reservoirs with Intelligent Wells and WAG Injection -** S. Santos[1]*, D. Schiozer[1] [1]University of Campinas
14:10	**MoA07 - Topological Analyses of 3D Discrete Fracture Networks: A Graph Approach to Flow in Fractured Rock -** T. Rajeh[1]*, I. Cañamon[2], R. Ababou[1], M. Marcoux[1] [1]Institut de Mécanique des Fluides de Toulouse (IMFT), CNRS & Université de Toulouse; [2]Universidad Politécnica de Madrid	14:10	**MoB07 - Well Location Optimisation by using Surface-Based Modelling and Dynamic Mesh Optimisation -** P. Salinas[1]*, C. Jacquemyn[1], C. Heaney[1], C. Pain[1], M. Jackson[1] [1]Imperial College London
14:35	**MoA08 - Multiscale Matrix-Fracture Transfer Functions for Naturally Fractured Reservoirs Using an Analytical Discrete Fracture Model -** R. Hazlett[1]*, R. Younis[2] [1]Nazarbayev University; [2]University of Tulsa	14:35	**MoB08 - Geoengineering Tool for Field Development: A Decision-Making Tool for Deviated Well Placement -** S. Bouquet[1]*, A. Fornel[1] [1]IFP Energies nouvelles
15:00	Coffee Break / Poster Session 1		
	Flow and Mechanics in Fractured Media III H. Hajibeygi (Delft University of Technology), A. Cominelli (Eni)		**History Matching and Production Optimization III** A. Skorstad (Resoptima)
15:30	**MoA09 - Coupled Forward Simulation of Seismicity: a Stick-Slip Model for Fractures and Transient Geomechanics -** Z. Han[1]*, G. Ren[1], R. Younis[1] [1]The University of Tulsa	15:30	**MoB09 - Distributed Quasi-Newton Derivative-Free Optimization Method for Optimization Problems with Multiple Local Optima -** G. Gao[1]*, Y. Wang[1], J. Vink[2], T. Wells[2], F. Saaf[1] [1]Shell Global Solutions (US) Inc.; [2]Shell Global Solutions International B.V

Oral Presentations | Monday 14 September 2020

15:55	**MoA10 - Pressure Transient Analysis of Wells in Deformable Fractured Porous Media Using Phase-Field Approach -** T. Kadeethum[1]*, S. Lee[2], H.M. Nick[1], M.F. Wheeler[3] [1]Technical University of Denmark; [2]Florida State University; [3]University of Texas at Austin	15:55	**MoB10 - An Automatic Well Planner for Efficient Well Placement Optimization Under Geological Uncertainty -** B. Kristoffersen[1]*, M. Bellout[1], T. Silva[1] [1]NTNU
PENTLAND EAST		**PENTLAND WEST**	
16:20	**MoA11 - Turbulent Flow Effects in A Slickwater Fracture Propagation in Permeable Rock -** E. Kanin[1]*, D. Garagash[2,1], A. Osiptsov[1] [1]Multiphase Systems Lab, Skolkovo Institute of Science and Technology (Skoltech); [2]Dalhousie University	16:20	**MoB11 - Large-Scale Field Development Optimization Using a Two-Stage Strategy -** Y. Nasir[1]*, O. Volkov[1], L.J. Durlofsky[1] [1]Stanford University
16:45	**MoA12 - Particle Transport Scheme for Embedded Discrete Fracture Models -** R. Monga[1]*, R. Deb[2], D.W. Meyer[1], P. Jenny[1] [1]Institute of Fluid Dynamics, ETH Zürich; [2]Laboratory of Physical Chemistry, ETH Zürich	16:45	**MoB12 - Optimizing Low Salinity Waterflooding with Controlled Numerical Influence of Physical Mixing Considering Uncertainty -** L. Ladipo[1]*, M. Blunt[1], P. King[1] [1]Imperial College London
17:10	**Networking Reception/ Poster Session 1**		
19:10	**End of Day 1**		

Poster Presentations | Monday 14 September 2020

POSTER AREA

Poster Session 1

17:10	**A Novel Method for Quickly Obtaining SRV in Multi-Stage Fracturing Reservoirs with Different Fracturing Radii -** W. Shi[1]*, Y. Yao[1], M. Wang[2], J. Zhang[1] [1]China Univeristy of Petroleum; [2]University of Leeds
	High Performance Computing of Oil Reservoir Simulations Along A Multiscale Elliptic Solver - A. Jaramillo[1]*, R. Trevisanuto[1], S. Paz[1], R. Ausas[1], F. Sousa[1], G. Buscaglia[1], F. Pereira[2] [1]University of São Paulo; [2]University of Texas at Dallas
	Application of Video Compression Algorithms to Reservoir Simulation Data - M. Rogowski[1,2]*, S. Kayum[2] [1]King Abdullah University of Science and Technology; [2]Saudi Aramco
	An Algebraic Dynamic Multilevel (ADM) Multiscale Method with Basis Functions Enrichment for Two-Phase Flow Reservoirs Simulation - P.R.M. Lyra[1]*, J.C.A. Santos[1], J.P.R. Andrade[1], R.J.M. Lira Filho[1], D.K.E. Carvalho[1] [1]Universidade Federal de Pernambuco
	Quantitative Analysis for Timing of Injection-To-Production Wells in Tight Reservoirs Based on Fracture Volume Model - S. Di[1]*, S. Cheng[1], L. Luo[1], C. Wei[1], H. Li[1], W. Shi[1], J. Zhang[1] [1]China Univeristy of Petroleum
	Experimental Evaluation of Sealing Effect of Nano Calcium Carbonate Blocking Agent on Shale Microfracture - R. Yang[1], P. Li[1]*, Y. Zhou[1] [1]China National Nuclear Corporation
	Importance of Improving Support Material Removal from Polyjet 3D-Printed Porous Models - S. Lopez-Saavedra[1]*, S. Ishutov[1], R. Chalaturnyk[1], G. Zambrano-Narvaez[1] [1]University of Alberta
	The Impact of Ganglion Mobilization During Low Salinity Waterflooding - M. Amani[1]*, S. McDougall[1] [1]Institute of GeoEnergy Engineering, Heriot-Watt University
	A New Mathematical Relationship Between Pore Size Distribution and Relative Permeability Using Sigmoid Functions - A. Chaturvedi[1]*, M. Nielsen[1] [1]NTNU
	Modified RAND Algorithms for Multiphase Geochemical Reactions - F.D.A. Medeiros[1]*, W. Yan[1], E.H. Stenby[1] [1]Center for Energy and Resources Engineering, Department of Chemistry, Technical University Of Denmark
	EOR: Introducing the Most Effective and Economical Oil Recovery Method - R.A. Hartono[1]* [1]Clausthal University of Technology

17:10	**The Impact of Numerical Discretisation on the Correct Simulation of CO2 Convective Flow Patterns -** M. Awag[1]*, S. Ghanbari[1], E. Mackay[1] [1]Heriot-Watt University
	Impact of Carbonate Tidal Channels Modelling on Reservoir Performance Forecasting: Onshore Supergiant Oil Field, Southern Iraq - A. Al-Ali[1]*, K. Stephen[1], A. Shams[1], H. Alqassab[2] [1]Heriot Watt Unversity; [2]ExxonMobil Development
	Numerical Simulation of the Interactions Between Hydraulic and Natural Fractures Using High Aspect Ratio Interface Elements - P. Cleto[1]*, O. Manzoli[1], M. Maedo[1], E. Rodrigues[1], L. Guimarães[2] [1]São Paulo State University (UNESP); [2]Federal University of Pernambuco
	Data Integration and 3D Static Modelling in Conditions of Pronounced Multi-Stage Block Tectonics (J Field) - R. Pesalj[1]*, N. Nemanjic[1] [1]NTC NIS-NAFTAGAS D.O.O.
	A Probabilistic Modeling Workflow for Geological Carbon Storage Integrated with Coupled Flow and Geomechanics Simulations - J. Torres[1]*, I. Bogdanov[1], M. Boisson[2] [1]Computational Hydrocarbon Laboratory for Optimized Energy Efficiency, University of Pau and Pays de l'Adour; [2]Total SA, Centre Scientifique et Technique Jean Féger (CSTJF)
	Numerical Simulation of A Naturally Fractured Oil Reservoir Using Equivalent Dual and Single-Porosity Models - A. Sljapic[1]*, N. Nemanjic[1], L. Malencic[1], D. Knezevic[1], M. Dragosavac[1], R. Pesalj[1] [1]NTC NIS Naftagas, LLC
	Glimm and Finite Volume Schemes for Polymer Flooding Model with and Without Inaccessible Pore Volume Law - G. Dongmo[1], B. Braconnier[1]*, C. Preux[1], Q. Tran[1], C. Berthon[2] [1]IFP Energies Nouvelles; [2]Université de Nantes, Laboratoire de Mathématiques Jean Leray, UMR 6629, Département de Mathématiques
	Geological Model Uncertainty Matrix: A Case Study of a Jurassic Carbonate Reservoir in Saudi Arabia - Z. Alabdulmohsen[1]*, F. Bukhamsin[1], S. Khattab[1] [1]Saudi Aramco
	How Does Mixing Influence Low Salinity Water Flooding? - V. Niasar[1]*, R. Aziz[1], S. Hasan[1], N. Karadimitriou[2] [1]University Of Manchester; [2]Stuttgart University
	Analytical Pore Network Approach (APNA) for Rapid Estimation of Capillary Pressure Behaviour in Rock Samples - H. Rabbani[1]*, D. Guerillot[1], T. Seers[1] [1]Texas A&m University At Qatar

17:10	**Neural Network Classification as A Tool to Achieve A More Reliable Reservoir Characterisation -** S. Stankovic[1]*, E. Kharyba[1], L. Malencic[1], L. Stulov[1] [1]NTC NIS-Naftagas
	Hydromechanical Analysis of Permeability Reduction in Naturally Fractured Carbonate Reservoir Using Finite Elements with Embedded Discontinuity - L. Beserra[1]*, B. Maciel[1], L. Pereira[2], L. Guimarães[1], O. Manzoli[3] [1]Federal University of Pernambuco; [2]PETROBRAS - Petróleo Brasileiro S.A.; [3]São Paulo State University
	Calculation of Well Productivity Index in Stochastic Porous Media - D. Posvyanskii[1]*, A. Novikov[2] [1]Roxar Services AS; [2]TU Delft
	A Numerical Scheme for Grid Interface Mass Flux Calculation in 3D Hybrid Grids Near Wells - C. Maliska[1]*, F. Hurtado[2], A. Silva[1] [1]Federal University of Santa Catarina; [2]ESSS - Engineering Simulation and Scientific Software
	A Computational Framework for Safety Assessment of Underground Energy Storage: Multiphase Poroelastic Model - K. Ramesh Kumar[1]*, H. Hajibeygi[1] [1]Delft University of Technology
	UNISIM-III: Benchmark Case Proposal Based on a Fractured Karst Reservoir - M. Correia[1]*, V. Botechia[1], L. Pires[1], V. Rios[1], S. Santos[1], V. Rios[1], J. Hohendorff[1], M. Chaves[1], D. Schiozer[1] [1]University of Campinas
	Numerical Inter-well Interference Well Test Analysis in Stratified Water Flooding Reservoir - J. Zhang[1]* [1]University of Utah
	A Recursive Mixed Multiscale Method for Karst Conduit-Flow in Carbonate Reservoirs - P. Ferraz[1]*, E. Abreu[1], M. Murad[2], P. Pereira[2] [1]University of Campinas (Unicamp); [2]National Laboratory for Scientific Computing (LNCC)
	Modelling Porosity and Permeability Alteration during CO2 WAG Injection in Carbonate Oil Reservoirs - A. Ribeiro[1]*, L. Guimarães[2], E. Mackay[3] [1]University Of Queensland; [2]Federal University of Pernambuco; [3]Heriot-Watt University
	Bayesian Inference of Covariance Parameters in Spectral Approach to Geostatistical Simulation - N. Ismagilov[1]*, I. Azangulov[2], V. Borovitskiy[2], M. Lifshits[2], P. Mostowsky[2] [1]Gazpromneft Science & Technology Center; [2]Saint Petersburg State University
	Investigation of the Accuracy and Efficiency of the Operator-based Linearization through an Advanced Reservoir Simulation Framework - A. Al-Jundi[1]*, L. Li[1], A. Abushaikhaa[1] [1]Hamad Bin Khalifa University
	An Advanced Parallel Framework for Reservoir Simulation with Mimetic Finite Difference Discretization and Operator-based Linearization - L. Li[1]*, A. Abushaikhaa[1] [1]Hamad Bin Khalifa University
	Double Porosity Models Or Single-Porosity Equivalent Models for Naturally Fractured Reservoirs? - F. Oulebsir[1]* [1]Reservoir engineer Freelance
	Impact of Pertinent Parameters on Foam Quality in the Entrance Region of Porous Media: Mathematical Modeling - A. Kazemi Abadshapoori[1]*, H. Darvish[2], S. Taheri[2], S. Damshekan[2], S. Benmohamadkhajeh[3] [1]Shiraz University; [2]Islamic Azad University; [3]Persian Gulf University
	Numerical Effects of Fluid Flow Modelling in Surfactant Chemical Flooding - O. Akinyele[1]*, K. Stephen[1] [1]Heriot-watt University
	Modeling Multiphysical CO2 EOR Processes in Conventional and Unconventional Petroleum Reservoirs - S. Wang[3], X. Zhou[2], J. Li[2], B. Yao[1], Y. Wu[1]* [1]Colorado School of Mines; [2]King Fahd University of Petroleum and Minerals; [3]Chevron

17:10	**Potential for Convective Mixing of CO2 in Oil Under Flowing Conditions -** T.S. Mykkeltvedt[1], S.E. Gasda[1]* [1]NORCE Norwegian Research Centre
	Evaluation of the Effect of Mineral Dissolution on the Mechanical Behavior of Synthetic Carbonate Rocks - K. Galindo[1]*, C. Lins[2], A. Lima[1], L. Guimarães[1] [1]Federal University of Pernambuco; [2]Federal Rural University of Pernambuco
	Advanced Well/Near-Well Modelling for Commingling Production Using Paralleled Iterative Coupling Approach - J. Cao[1]*, T. Johansen[2] [1]Xi'an Shiyou University; [2]UPRC Inc.
	The Bazhenov Formation Characteristics: Unconventional Reservoir Nonuniformity Investigation for Geological and Basin Modelling - M. Tikhonova[1]*, D. Ivanova[1], A. Kalmykov[1], R. Borisov[2], G. Kalmykov[1] [1]Lomonosov Moscow State University; [2]A.V.Topchiev Institute of Petrochemical Synthesis, RAS
	Laboratory Measurements of Seismic Dispersion and Attenuation Caused by CO2 EOR-Related Flooding - A. Ghaderi[1]* [1]Sintef Industry
	Numerical Well Test Analysis Considering Shear Thinning and Shear Thickening in Polymer Flooding Reservoir - J. Zhang[1]* [1]University of Utah
	GPU-Based Parallel Algorithm for Solving Multiphase, Multicomponent Fluid Filtration Problem - T. Imankulov[1]*, D. Akhmed-Zaki[1], B. Daribayev[1], O. Turar[1] [1]Al Farabi Kazakh National University
	Mathematical and Computational Modeling of Polymer Flooding in Oil Reservoirs - H.M. De Araujo Ciriaco[1]*, A. Dos Santos[1], S. Araujo de Lima[1], J.H. Da Silva Mariano[1] [1]Universidade Federal Do Rio Grande Do Norte
	A Semi-Analytical Solution of Dimethyl Ether Enhanced Water Flooding - P. Soleimani[1], M. Chahardowli[1]*, M. Simjoo[1] [1]Sahand University of Technology
	Petrophysical Rock Typing: Enhanced Permeability Prediction for Tight Sandstone and Carbonate Reservoirs - A. Voskresenskiy[1]*, M. Kuntsevich[1], A. Goncharov[1], O. Popova[1] [1]LLC Gazpromneft STC
	Characterization of Movable Fluid Distribution in Ultra-Tight Sandstone and Relative Permeability Prediction with Low Field NMR - F. Wang[1]*, Z. Liu[1] [1]China University Of Petroleum
	GMRES Based Numerical Simulation of Multicomponent Multiphase Flow in Porous Media on LuNA Fragmented Programming System - N. Kassymbek[1]*, B. Matkerim[1], D. Lebedev[2], T. Imankulov[1], D. Akhmed-Zaki[2] [1]Al-Farabi Kazakh National University; [2]University of International Business
	Seismic Uncertainties Estimation for Automatic History Matching - A. Volkova[1]*, I. Matveev[1], M. Kuntsevich[2], V. Demyanov[3], G. Shishaev[2,3] [1]Tomsk Polytechnic University; [2]LLC Gazpromneft STC; [3]Heriot-Watt University
	A Sequential Fully-Implicit Solver for Two-Phase Subsurface Flows Using the Multiscale Robin Coupled Method - F. Rocha[1]*, F. Sousa[1], R. Ausas[1], G. Buscaglia[1], F. Pereira[2] [1]University of Sao Paulo; [2]The University of Texas at Dallas
	Solution to Finite Element Systems of Linear Equations in Three-Dimensional Induction Logging - P. Domnikov[1]*, Y. Koshkina[1] [1]Novosibirsk State Technical University
	Local Mass Conservative Approach for Approximating Multiphase Biot's equations - T. Kadeethum[1]*, P. Salinas[2], H.M. Nick[1], C. Pain[2] [1]Technical University of Denmark; [2]Imperial College London

Poster Presentations | Monday 14 September 2020

17:10	**Monotone Embedded Discrete Fracture Method for Flows in Porous Media -** K. Nikitin[1]*, R. Yanbarisov[1] [1]Marchuk Institute of Numerical Mathematics
	A Novel Method for Capturing Volume of Fracture-Cave Unit of Vertical Well Located in Filled Fracture-Cave - N. Feng[1]*, W. Shi[2], J. Zhang[2], M. Gao[3] [1]Research Institute of Petroleum Exploration & Development; [2]Beijing University of Petroleum; [3]No.4 Oil Production Plant, PetroChina Changqing Oilfield Company
	Modeling Transport and Retention: Simultaneous Evaluation of Dispersion and Retention Parameters - J. Rios[1]*, A. Santos[1], S. Lima[1] [1]Universidade Federal do Rio Grande do Norte
	Pore-Scale Modeling of Microbial Growth in A Two-Phase Saturated Porous Medium - G. Strobel[1]*, B. Hagemann[1], M. Wirth[1], L. Ganzer[1] [1]Clausthal University of Technology
	A New Method for Calculating the Equivalent Boundary Radii in Multilayer Reservoir with Vertical Non-Uniform Boundary - W. Shi[1]*, Y. Yao[2], M. Wang[1], J. Zhang[2] [1]University of Leeds; [2]Beijing University of Petroleum
	Numerical Modeling of Flow Through Naturally Fractured Porous Media - R. Quevedo[1]*, D. Roehl[1,2] [1]Faculdades Católicas; [2]Pontifical Catholic University of Rio de Janeiro
	A Coupled Geomechanics and Flow Model for Enhanced Gas Recovery and CO2 Storage in Shale Reservoirs - X. Yan[1]*, L. Liu[1], J. Yao[1], D. Fan[1] [1]China University of Petroleum
	Generalized Multi-Dual Porosity Model for Hydromechanical Simulation of Naturally Fractured Reservoirs - J.A. Rueda Cordero[1]*, C. Mejia Sanchez[1], D. Roehl[1] [1]Pontifical Catholic University of Rio de Janeiro
	Digital Routine Core Analysis of Bentheimer Sandstone Using GeoDict - R.A. Hartono[1]* [1]Clausthal Technology of University
	A Sequential Computational Model for Coupling Flow and Geomechanics Incorporating Stress- Induced Permeability Hysteresis - E. Abreu[1]*, M. Murad[1], S. Lima[1], W. Lambert[1] [1]University Of Campinas - Unicamp
	Discrete Fracture-Matrix Simulations Using Cell-Centered Nonlinear Finite Volume Methods - W. Zhang[1]*, M. Al Kobaisi[1] [1]Khalifa University Of Science & Technology
	Fragmented Algorithm for Construction of Adapted Structured Computational Grids Based on Inverted Beltrami Equation - O. Turar[1]*, D. Akhmed-Zaki[1], G. Khakimzyanov[3], B. Daribayev[2], D. Lebedev[1] [1]University of International Business; [2]Al-Farabi Kazakh National University; [3]Novosibirsk State University

17:10	**A Mathematical Model for Scaling and Wettibility Alteration in ASP Flooding -** G. Chen[1]*, X. Zhang[1], M. Ma[1], X. Su[1], K. Lu[1], C. Wei[1] [1]E&D Research Institute, Daqing Oilfield Company Ltd.
	Studying the Effects of Heterogeneity on Dissolution Processes Using Operator Based Linearization and High-Resolution LiDAR Data - S. De Hoop[1]*, D. Voskov[1,2], G. Bertotti[1] [1]Delft University of Technology; [2]Stanford University
	A Simplified Mechanistic Population Balance Model for Foam Enhanced Oil Recovery (EOR) - L. Ding[1]*, D. Guerillot[1] [1]Texas A&M University at Qatar
	Assessment of Interaction Between Natural and Tecnogenic Fractures During Multi-Stage Fracturing - A. Gula[1]*, A. Bochkarev[1], A. Vishnivetskiy[1], A. Glazyrina[2], R. Nikitin[3] [1]Phystech Geoservise; [2]Gazpromneft STC; [3]MIPT Center of Engineering and Technology
	Algorithm for Construction the Geological Surfaces with Minimum Curvature - A. Bezrukov[1]*, E. Zakharova[1], R. Gazizov[1] [1]RN-BashNIPIneft, LLC
	Fractured Reservoir Characterization in Brazilian Pre-Salt Using Pressure Transient Analysis with a Probabilistic Approach - C.K. Quispe Cerna[1,2]*, D.J. Schiozer[1,2], G. Soares Oliveira[1,2], A. De Lima[1,2], R. B. Z. L. Moreno[2] [1]Center for Petroleum Studies; [2]University of Campinas
	High-Resolution Hydraulic Fracture Network Modeling on Adaptive PEBI Grids - D. Filippov[1]*, B. Vasekin[1], D. Maksimov[1], D. Mitrushkin[1], A. Roshchektaev[2] [1]MIPT Center for Engineering & Technology; [2]Gazpromneft Science & Technology Center
	Albite-Anorthite Synergistic Effect on the Performance of Nanofluid Enhanced Oil Recovery - R. Nguele[1]*, E.O. Ansah[2], K. Nchimi Nono[3], K. Sasaki[1] [1]Kyushu University; [2]University of Melbourne; [3]The University of Yaounde 1
	Laboratory Simulation of Kerogen Cracking Under Reservoir Conditions to Invent Hydrocarbon Generation in Bazhenov Source Rocks - A. Kalmykov[1]*, M. Tikhonova[1], M. Topchii[1], D. Ivanova[1], A. Bychkov[1], G. Kalmykov[1] [1]Lomonosov Moscow State University
	Strategies Acceleration for Non-Linear Finite Volume Methods for Numerical Simulation of Single-Phase Flow in Oil Reservoirs - F.R.L. Contreras[1], P.R.M. Lyra[1]*, D.K.E. De Carvalho[1] [1]Universidade Federal de Pernambuco
	Salt Precipitation in Gas Reservoir - R.A. Hartono[1]* [1]Clausthal University of Technology
	Direct Numerical Simulation of Two-Phase Flow in 2D Pore-Scale Images at Extremely Low Capillary Number - J. Maes[1]* [1]Heriot-Watt University

Oral Presentations | Tuesday 15 September 2020

08:00	**Registration and Welcome Coffee**	
PENTLAND EAST		**PENTLAND WEST**
Geomechanics, Compaction, Subsidence I P. Samier (Total)		**History Matching and Production Optimization IV** L.J. Durlofsky (Stanford University)
08:30	**TuA01 - An Extended Fixed-Stress Split Scheme for Coupling Black-Oil Flows and Geomechanics -** M. Murad[1]*, M. Correa[2] [1]Laboratorio Nacional de Computacao Cientifica; [2]Instituto de Matemática, Estatística e Computação Científica, UNICAMP	**08:30** **TuB01 - A Bayesian Optimisation Workflow for Field Development Planning Under Geological Uncertainty -** R. Bordas[1]*, J.R. Heritage[1], M.A. Javed[1], G. Peacock[1], T. Taha[1], P. Ward[1], I. Vernon[2], R.P. Hammersley[1] [1]Emerson Exploration & Production Software; [2]Department of Mathematical Sciences, Durham University
08:55	**TuA02 - Hydro-Mechanical Coupling for Flow Diagnostics: A Fast Screening Method to Assess Geomechanics on Flow Field Distributions -** L. Gutierrez Sosa[1]*, S. Geiger[1], F. Doster[1] [1]Heriot-Watt University	**08:55** **TuB02 - Permeability Estimation Using Minkowski Functional Distributions -** X. Ouyang[1]*, M. Tawfik[1], R. Johns[1] [1]The Pennsylvania State University
09:20	**TuA03 - A Real-Field Parallel, Multiscale Reservoir Geomechanics Simulator -** M. Figueiredo[1]*, L.C. De Sousa Junior[2], J.R. Pereira Rodrigues[1], L. Basílio dos Santos[1], R. Fernandes do Amaral[2], L. Da Silva Gasparini[1], R. Jesus de Moraes[1] [1]Petrobras Research and Development Center; [2]Petrobras S.A.	**09:20** **TuB03 - Optimization of WAG in Real Geological Field Using Machine Learning and Nature-Inspired Algorithms -** M. Nait Amar[2], A. Jahanbani Ghahfarokhi[1]* [1]NTNU (Norwegian University of Science and Technology); [2]University of M'Hamed Bougara Boumerdes
09:45	**TuA04 - Multiscale Extended Finite Element Method for Deformable Fractured Media -** F. Xu[1]*, H. Hajibeygi[1], B. Sluys[1] [1]Delft University of Technology	**09:45** **TuB04 - Constrained Iterative Ensemble Smoother for Multi Solution Search Assisted History Matching -** F. Forouzanfar[1]*, X. Wu[1] [1]ExxonMobil Upstream Research Company
10:10	**Coffee Break / Poster Session 2**	
Geomechanics, Compaction, Subsidence II D. Gunasekera (Schlumberger)		**Linear and Non-linear Solvers** J. Vink (Shell Global Solutions Intl. B.V.)
10:40	**TuA05 - Small Data Optimization of a Variable Subsidence Profile Using a Sequentially Applied Kalman Filter -** T. Ramsay[1]* [1]Halliburton	**10:40** **TuB05 - Additive Schwarz Preconditioned Exact Newton Method as a Nonlinear Preconditioner for Multiphase Porous Media Flow -** Ø. Klemetsdal[1]*, A. Moncorgé[2], O. Møyner[1], K. Lie[1] [1]SINTEF Digital; [2]Total E&P
11:05	**TuA06 - Mixed Hybrid Finite Volume and Virtual Element Formulation for Coupled Poromechanics -** A. Borio[1], N. Castelletto[2], F. Hamon[3]*, A. Mazuyer[4], R. Settgast[2], J. White[2], H. Tchelepi[4] [1]Politecnico di Torino; [2]Lawrence Livermore National Laboratory; [3]Total E&P; [4]Stanford University	**11:05** **TuB06 - A Novel and Efficient Preconditioner for Solving Lagrange Multipliers-Based Discretization Schemes for Reservoir Simulations -** S. Nardean[1]*, M. Ferronato[2], A.S. Abushaikha[1] [1]Hamad Bin Khalifa University; [2]University of Padova
11:30	**TuA07 - Methodology for Partial Coupling of Flow and Mechanical Simulators -** R. Lima[1]*, L. Guimarães[1], J. Joseph[1], L. Pereira[2] [1]Departament of Civil Engineering; [2]PETROBRAS - Petróleo Brasileiro S.A	**11:30** **TuB07 - Machine-Learning Informed Prediction of Linear Solver Tolerance for Non-Linear Solution Methods in Numerical Simulation -** E. Oladokun[1,3], S. Sheth[1]*, T. Jönsthövel[2], K. Neylon[1] [1]Schlumberger Oilfield UK plc; [2]Schlumberger Norway; [3]The University of Oxford
11:55	**TuA08 - Fluid-Rock Geomechanical Interactions: Micro-Mechanics and Fractured Reservoirs -** G. Couples[1]* [1]Heriot-watt University	**11:55** **TuB08 - Algebraic Wavefront Parallelization for ILU(0) Smoothing in Reservoir Simulation -** S. Gries[1]* [1]Fraunhofer Institute SCAI
12:20	**TuA09 - Modeling of Water-Induced Fracture Growth Pressure Using Poroelastic Approach -** P. Kabanova[1]*, E. Shel[1] [1]Gazpromneft Science & Technology Centre	**12:20** **TuB09 - Non-Linear Solver Optimisation for Multiphase Porous Media Flow Based on Machine Learning -** V.L.S. Silva[1]*, P. Salinas[1], C.C. Pain[1], M.D. Jackson[1] [1]Imperial College London
12:45	**Free Afternoon**	

Oral Presentations | Wednesday 16 September 2020

08:00	**Registration and Welcome Coffee**

PENTLAND EAST

Multiphysics & High-performance Computing
P. Sarma (Tachyus)

08:30	**WeA01 - High Performance Framework for Modelling of Complex Subsurface Flow and Transport Applications -** M. Khait[1]*, D. Voskov[1,2] [1]Delft University of Technology; [2]Stanford University
08:55	**WeA02 - Application of Superposition and the Fast Marching Method to the Rapid Modeling of Multi-Well Interactions -** K. Nakajima[1]*, C. Liu[1], C. Li[1], M. King[1] [1]Texas A&M University
09:20	**WeA03 - Multiphysics Centimeter-Scale Pore-Network Modelling for Two-Phase Flow and Transport -** V. Niasar[1]*, S. An[1], H. Erfani[1] [1]University of Manchester
09:45	**WeA04 - Upscaling of Nanoparticle Retention Rate for Single-Well Applications From Pore-Scale Simulations -** N. Bueno[1], M. Icardi[2]*, F. Municchi[2], H. Solano[1], J. Mejía[1] [1]Universidad Nacional de Colombia; [2]University of Nottingham
10:10	**Coffee Break / Poster Session 2**

Machine Learning and Data Analytics I
A.H. Elsheikh (Heriot-Watt University)

10:40	**WeA05 - Reducing of Flash Computation Time in Compositional Reservoir Simulation with a Dynamic Learning Artificial Neural Network -** D. Guérillot[1]*, J. Bruyelle[1] [1]Texas A&M University at Qatar
11:05	**WeA06 - Machine Learning of Dual Continuum Transfer Models for Flow Simulations in Fractured Reservoirs -** M. Ashworth[1]*, F. Doster[1], A. El Sheikh[1] [1]Heriot-Watt University
11:30	**WeA07 - Conditioning Surface-Based Geological Models to Well Data Using Neural Networks -** Z. Titus[1]*, C. Pain[1], C. Jacquemyn[1], P. Salinas[1], C. Heaney[1], M. Jackson[1] [1]Imperial College London
11:55	**WeA08 - Deep-Learning-Based 3D Geological Parameterization and Flow Prediction for History Matching -** M. Tang[1]*, Y. Liu[1], L. Durlofsky[1] [1]Stanford University
12:20	**Lunch Break**

Machine Learning and Data Analytics II
P. Sarma (Tachyus),
D. Guérillot (Texas A&M University at Qatar)

13:20	**WeA09 - Deep-CRM: A New Deep Learning Approach for Capacitance Resistive Models -** A. Yewgat[1]*, D. Busby[1], M. Chevalier[2], O. Teste[2], C. Lapeyre[3] [1]Total SA; [2]Université Paul Sabatier - Toulouse III (IRIT); [3]CERFACS
13:45	**WeA10 - Physics Based Deep Learning for Nonlinear Two-Phase Flow in Porous Media -** O. Fuks[1]*, H. Tchelepi[1] [1]Stanford University
14:10	**WeA11 - Recent Developments Combining Ensemble Smoother and Deep Generative Networks for Facies History Matching -** S. Canchumuni[1]*, A. Emerick[2], M.A. Pacheco[1] [1]Pontifical Catholic University of Rio de Janeiro; [2]Petrobras - Cenpes
14:35	**WeA12 - Machine Learning for Fast EOR Flooding Simulation -** B. Samson[1]*, C. Marooney[1], S. Godefroy[1], S. Sheth[1] [1]Schlumberger
15:00	**Coffee Break / Poster Session 2**

Model Reduction and Emulators of Dynamical Systems
A.H. Elsheikh (Heriot-Watt University)

15:30	**WeA13 - Evaluation of A Data-Driven Flow Network Model (FlowNet) for Reservoir Prediction and Optimization -** A. Kiær[1], O.P. Lødøen[1], W. De Bruin[1], E. Barros[2], O. Leeuwenburgh[2,3]* [1]Equinor; [2]TNO; [3]Delft University of Technology

PENTLAND WEST

Mesh Generation and Discretization Schemes I
R. Masson (Université Côte d'Azur)

08:30	**WeB01 - Numerical Modelling of CO2 Migration through Faulted Storage Strata with a New Asynchronous FE-FV Compositional Simulator -** Q. Shao[1,2]*, S. Matthai[1] [1]The University of Melbourne; [2]The University of Queensland
08:55	**WeB02 - Discontinuous Control Volume Finite Element Method for Multiphase Flow in Porous Media on Challenging Meshes -** J. Al Kubaisy[1]*, H. Osman[1], P. Salinas[1], C. Pain[1], M. Jackson[1] [1]Imperial College London
09:20	**WeB03 - Comparing Three DFN Simplification Strategies for Two-Phase Flow Applications -** P. Anquez[1], M. Zakari[1]*, G. Caumon[1] [1]GeoRessources-ENSG, Université De Lorraine, CNRS, F54000
09:45	**WeB04 - An Efficient Implementation of the Discontinuous Galerkin Method for Multiphase Flows through Heterogeneous Porous Media -** N. Dashtbesh[1,2]*, B. Noetinger[1], G. Enchéry[1] [1]IFP Energies Nouvelles; [2]Sorbonne University

Mesh Generation and Discretization Schemes II
S. Matthai (University of Melbourne)

10:40	**WeB05 - Adaptive Conservative Local Time-Stepping Scheme for Nonlinear Multiphase Flow and Transport in Porous Media -** R. Hasanzade[1]*, H. Tchelepi[1] [1] Stanford University
11:05	**WeB06 - Modeling Compressible Gas Flow in Anisotropic Reservoirs Using A Nonlinear Finite Volume Method -** W. Zhang[1]*, M. Al Kobaisi[1] [1]Khalifa University of Science & Technology
11:30	**WeB07 - Adaptive Mesh Refinement for Thermal-Reactive Flow and Transport on Unstructured Grids -** E. Jones[1]*, D. Voskov[1,2] [1]Delft University of Technology; [2]Stanford University
11:55	**WeB08 - Higher Resolution Hybrid Unstructured Spectral Finite-volume Methods For Flow In Porous Media -** Y. Xie[1], M. Edwards[2]* [1]Henan University; [2]Swansea University
12:20	**Lunch Break**

Mesh Generation and Discretization Schemes III
A. Cominelli (Eni)

13:20	**WeB09 - A Unified Discretization for DFM and EDFM -** M. Karimi-Fard[1]*, L. Durlofsky[1] [1]Stanford University
13:45	**WeB10 - Two-Phase Darcy Flows in Fractured and Deformable Porous Media, Convergence Analysis and Iterative Coupling -** F. Bonaldi[1], K. Brenner[1], J. Droniou[2], R. Masson[1]* [1]Université Côte d'Azur, CNRS, Inria, LJAD; [2]Monash University
14:10	**WeB11 - Parametric Space-Based Finite-Element - Finite-Volume Computations: Reservoir Simulation on Unstructured Poly-Element Type Meshes -** S. Matthai[1]*, L. Formaggia[2] [1]University of Melbourne; [2]Politechnical University of Milan
14:35	**WeB12 - Quasi-K-Orthogonal Grid Generation for M-matrix CVD-MPFA -** S. Manzoor[1]*, M. Edwards[2], A. Dogru[1] [1]Aramco; [2]Swansea University
15:00	**Coffee Break / Poster Session 2**

Unconventional Resources and CO2 Sequestration
R. Schulze-Riegert (Schlumberger)

15:30	**WeB13 - Simulation of Foam-Assisted CO2 Storage in Saline Aquifers -** X. Lyu[1]*, D. Voskov[1,2], W. Rossen[1] [1]Delft University of Technology; [2]Stanford University

Oral Presentations | Wednesday 16 September 2020

PENTLAND EAST		PENTLAND WEST	
15:55	**WeA14 - Nonlinear State Constraints Handling in Waterflooding Optimization Through Reduced Order Models -** A. Souza[1]*, A. Castro[1], M. Dall'Aqua[2], J. Tueros[1], B. Horowitz[1], E. Gildin[2] [1]Federal University of Pernambuco; [2]Texas A&M University	15:55	**WeB14 - Compositional Modelling of Petroleum Reservoirs and Subsurface CO2 Storage with the MUFITS Simulator -** A. Afanasyev[1]* [1]Moscow State University
16:20	**WeA15 - Two-Stage Scenario Reduction Process for An Efficient Robust Optimization -** S.K. Mahjour[1]*, A.A.D.S. Dos Santos[1], M.G. Correia[1], D.J. Schiozer[1] [1]CEPETRO/FEM – University of Campinas (UNICAMP)	16:20	**WeB15 - Improved Extended Blackoil Formulation for CO2EOR Simulations -** T.H. Sandve[1]*, O. Sævareid[1], I. Aavatsmark[1] [1]NORCE AS
16:45	**WeA16 - Physics-Based Data-Driven Model for Production Forecast -** A. Blinovs[1], M. Khait[1], D. Voskov[1,2]* [1]TU Delft; [2]Stanford University	16:45	**WeB16 - Huff-n-Puff (HNP) Pilot Design in Shale Reservoirs Using Dual-Porosity, Dual-Permeability Compositional Simulations -** H. Hamdi[1,3]*, C.R. Clarkson[1], A. Esmail[2], M. Costa Sousa[1] [1]University of Calgary; [2]Encana Corporation; [3]Rock Flow Dynamics Inc.
17:10	**End of Day 3**		

Poster Presentations | Tuesday 15 September / Wednesday 16 September 2020

POSTER AREA

Poster Session 2

10:10	**Optimization of Technological Modes of Well Using Machine Learning Methods -** T. Imankulov[1]*, D. Akhmed-Zaki[1], B. Daribayev[1], Y. Kenzhebek[1], Y. Nurakhov[1] [1]Al Farabi Kazakh National University
	Flow Diagnostics for Model Ensembles - F. Watson[1]*, S. Krogstad[1], K. Lie[1] [1]Sintef Digital
	Calculation of Gas Injection Parameters Under Different Thermobaric Conditions - D. Borisov[1]*, V. Khilko[1] [1]LLC «Gazpromneft Science and Technology Centre»
	Fast Robust Optimization Using Mean Field Bias Correction - L. Wang[1,2]*, D.S. Oliver[1] [1]Norwegian Research Centre; [2]University of Bergen
	Learning Optimal Well-Production Policies - A. Dixit[1]*, A. Elsheikh[1], X. Wu[2] [1]Heriot-Watt University; [2]ExxonMobil Upstream Integrated Solutions Company
	Lattice Boltzman Method Assisting WAG Hysteresis and Trapped Non-Wetting Phase Simulations - F. Munarin[1], H. Haro[1], S. Lucena[1], L.G. Rodrigues[1]* [1]University Federal of Ceará
	Using Machine Learning Methods for Oil Recovery Prediction - B. Daribayev[1]*, D. Akhmed-Zaki[2], T. Imankulov[1], Y. Nurakhov[1], Y. Kenzhebek[1] [1]Al-Farabi Kazakh National University; [2]University of International Business
	Accounting for Model Discrepancy in Uncertainty Analysis by Combining Numerical Simulation and Bayesian Emulation Techniques - H. Nandi Formentin[1,2]*, I. Vernon[1], M. Goldstein[1], C. Caiado[1], G. Avansi[2], D. Schiozer[2] [1]Durham University; [2]University of Campinas
	Consistent Update of Well Path, Grid Structure and Grid Model Parameters Using an Iterative Ensemble Smoother - J. Saetrom[1]*, L. Gourc[1] [1]Resoptima
	Application of Sector Modeling Approach in a Probabilistic Study of a Giant Reservoir - L.O. Pires[1]*, V.E. Botechia[1], D. Schiozer[1] [1]University of Campinas
	Deep-Learning Inversion to Efficiently Handle Big-Data Assimilation: Application to Seismic History Matching - C. Xiao[1]*, A. Heemink[1], H. Lin[1], O. Leeuwenburgh[1,2] [1]Delft University of Technology; [2]TNO
10:10	**The Influence of the Petrophysical Properties' Heterogeneity on the Well Tests Interpretation Results -** R. Khusainov[1]*, A. Nekrasov[1], C. Aitov[1] [1]National University of Oil And Gas «Gubkin University»
	Statistical Model and Experimental Study of Oil Viscosity Reduction and Rock Wettability Alteration Induced by Nanoparticles - M. Bagheri Vanani[1], S.A. Tabatabaei-Nezhad[1]*, E. Khodapanah[1] [1]Sahand University of Technology
	Heuristic Optimization Algorithm for Oil Gathering Pipeline Network - A. Ananev[1,2], A. Khlyupin[1,2]*, A. Kadyrova[1,2] [1]Center for Engineering and Technology of MIPT; [2]Moscow Institute of Physics and Technology (MIPT)
	Hybrid Algorithm for the Complex Design of Oilfield Facilities Based on Graph Theory and Stochastic Optimization - A. Khlyupin[1,2]*, D. Uzhegov[1,2], A. Ananev[1,2], P. Lomovitskiy[1,2] [1]Center for Engineering and Technology MIPT; [2]Moscow Institute of Physics and Technology (MIPT)
	Multi-Survey Seismic Facies Clustering for Robust Regionalization - I. Churochkin[2], A. Volkova[2], S. Slivkin[2], N. Bukhanov[1,2]*, A. Butorin[1], V. Demyanov[3] [1]LLC "GazpromNeft STC"; [2]Tomsk Polytechnic University; [3]Heriot-Watt University
	Cube2Vec: Self-Supervised Representation Learning for Sub-Surface Models - P. Lang[2]*, T. Adeyemi[2], R. Schulze-Riegert[1] [1]Schlumberger Norwegian Technology Center; [2]Schlumberger Abingdon Technology Center
	Improving the Predictive Ability of A Geomechanical Model Using Neural Networks (Deep Learning) - N. Zakharenko[1]*, A. Gula[1], A. Bochkarev[1], Y. Ovcharenko[2] [1]Phystech Geoservice; [2]Gazpromneft STC
	Kogen-Combined Koval/Gentil Fractional Flow Model - D. Santos Oliveira[1]*, B. Horowitz[1], J.A.R. Tueros[1] [1]Federal University of Pernambuco
	A Surrogate-Based Approach to Waterflood Optimisation under Uncertainty - P. Ogbeiwi[1]*, K. Stephen[1], A. Arinkoola[2] [1]Heriot-Watt University; [2]Ladoke Akintola University of Technology
	Data-Driven Models Based on Flow Diagnostics - M. Borregales[1]*, O. Møyner[1], S. Krogstad[1], K. Lie[1,2] [1]SINTEF Digital; [2]Norwegian University of Science and Technology (NTNU)
	Upscaling on Polymer EOR in A Fractured Porous Media with Two Phase Flow - M.S. Dugstad[1]*, K. Kumar[1], Ø. Pettersen[2] [1]University Of Bergen; [2]NORCE, Uni Research CIPR
	Ensemble Smoother Applied to Conditioning Turbidite Channelized Reservoirs to Seismic and Well-Testing Data - T. Pinto[1]*, T. Silva[1], V. Lorena Vargas Grajales[1], A. Barreto Jr.[1], S. Pesco[1] [1]PUC - Rio

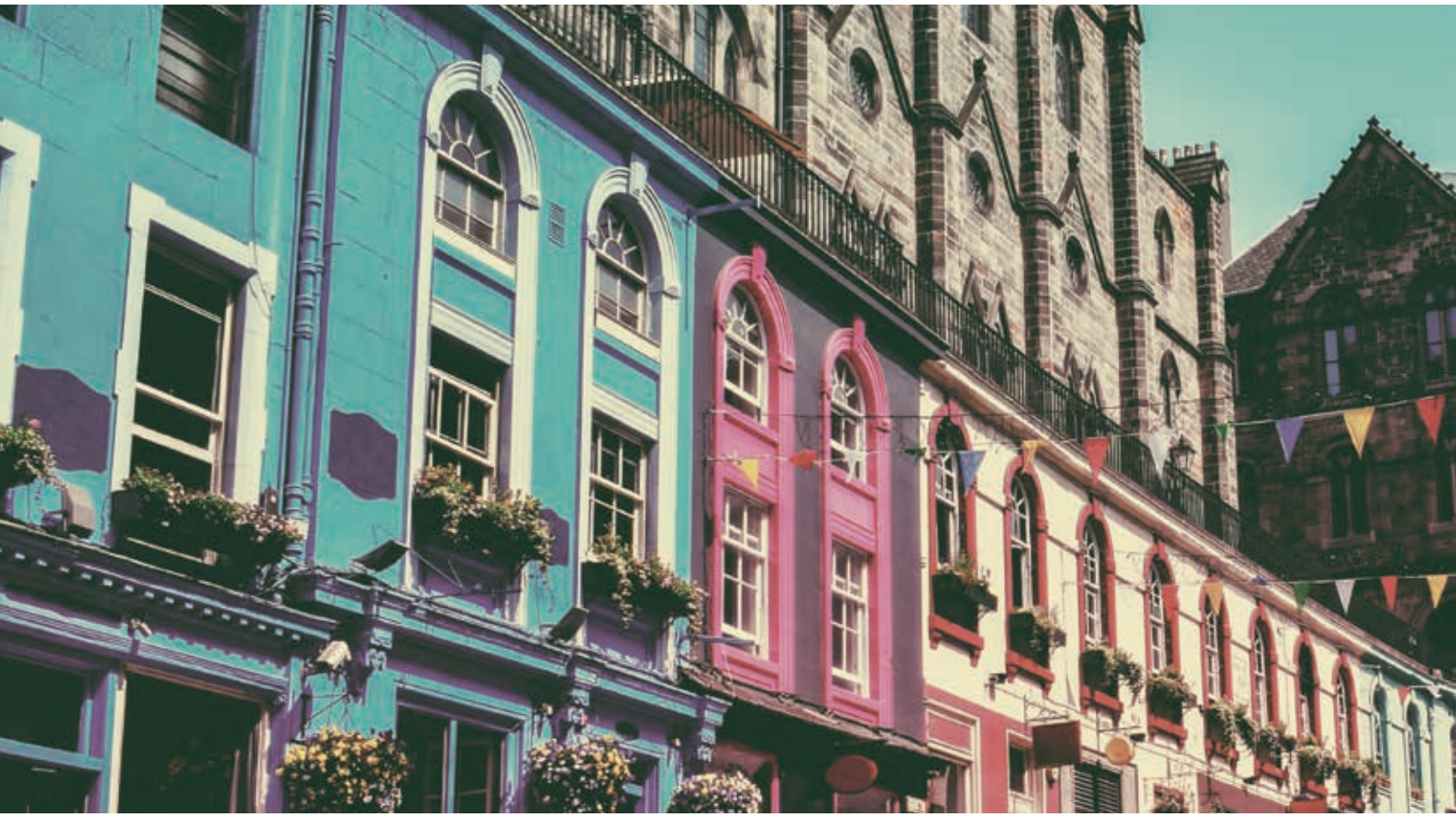
10:10	**Analytical Production Optimization with Modified NPV: Application to 2D Gas-Cone Reservoirs** - A. Bizzi[1]*, E. Fortaleza[1], F.P. Munerato[2] [1]Universidade de Brasilia; [2]Repsol Sinopec
	Data-Driven, Physics-Driven and Analytic Models for Waterflooding Optimisation Under Uncertainty - D.L. Moreno Bedoya[1]*, G. Garcia[2] [1]None; [2]Ecopetrol
	Producers Placement Optimization Using Mixed-Integer Programming - A. Kuvichko[1]*, A. Ermolaev[2] [1]Schlumberger; [2]Gubkin Russian State University of Oil and Gas
	Optimization of CO2 Storage under Geomechanical Risk with Coupled-Physics Models - F. Zheng[1], A. Jahandideh[1], B. Jha[1], B. Jafarpour[1]* [1]University of Southern California
	Identification of Critical Operational Uncertainties in Field Development Planning Using Stochastic Gradients - E. Barros[1], R. Hanea[2]*, L. Hustoft[2], O. Leeuwenburgh[1], R. Fonseca[1] [1]TNO; [2]Equinor
	Stochastic Closed-Loop Reservoir Management under Uncertain Predictions and Development Plans - A. Jahandideh[1], B. Jafarpour[1]* [1]University of Southern California
	Well Rates and Location Optimization Considering Genetic Algorithms and Surrogate Models - M. Garrido[1]*, S. Bastos[1], L. Oliveira[1] [1]Federal University of Pernambuco
	A Novel Approach to Multilevel Data Assimilation - M. Nezhadali[1,2]*, T. Bhakta[1], K. Fossum[1], T. Mannseth[1] [1]Norwegian Research Center (NORCE); [2]University of Bergen (UiB)
	Gauss-Newton Trust Region Search Optimization Method for Least Squares Problems with Singular Hessian - G. Gao[1]*, F. Saaf[1], J. Vink[2], M. Krymskaya[2], T. Wells[2] [1]Shell Global Solutions (US) Inc.; [2]Shell Global Solutions International B.V
	Novel Ensemble Data Assimilation Algorithms Derived from A Class of Generalized Cost Functions - X. Luo[1]* [1]Norwegian Research Centre (NORCE)
	Technological Parameters Optimization in Development of Gas Field - A. Chingiz[1]* [1]Gubkin Russian State University of Oil And Gas
	Deep-DCA A New Approach for Well Hydrocarbon Production Forecasting - D. Busby[1]* [1]Total
	GAN-Based Approach to Geological Modeling for Integrating Historical Production Data - R. Rubinova[1]*, N. Ismagilov[2] [1]Peter The Great Saint-Petersburg Polytechnic University; [2]Gazpromneft Science & Technology Center
	A One-To-One Duality Between Network Models and Numerical Simulation with Successful Applications to Closed-Loop Reservoir Management - S. Nnozuba[1]*, G. Ren[1], R. Younis[1] [1]University of Tulsa
	How Does the Definition of the Objective Function Influence the Outcome of History Matching? - G. Eremyan[1]*, I. Matveev[1], G. Shishaev[1], V. Rukavishnikov[1], V. Demyanov[2] [1]Tomsk Polytechnic University; [2]Heriot-Watt University
	History Matching with Generative Adversarial Networks - S. Mohd Razak[1]*, B. Jafarpour[1] [1]University of Southern California
	Engineering Design of Neural Network Architectures for Estimation of Inter-Well Connectivity and Production Performance - J. Yu[1], A. Jahandideh[1], B. Jafarpour[1]* [1]University of Southern California
	Robust Reservoir Optimization with Multi-Completions Wells Using Dimensional Reduction and Surrogate Models - J.W.O. Pinto[1], S.M.B. Afonso[1]*, R.B. Willmersdorf[1] [1]Universidade Federal de Pernambuco

10:10	**New Way of Value of Information in Exploration Assessment Using Subsets in Uncertainties Reduction** - A. Logachev[1]*, V. Demo[2], E. Bogdanovich[3], R. Kim[3], A. Sizykh[3] [1]Saint-Petersburg State University; [2]GazpromNeft PJSC; [3]Gazprom Neft STC LLC
	Using SVD Algorithm to Solve Oil Displacement Problem - T. Imankulov[1]*, D. Akhmed-Zaki[1], B. Matkerim[1], L. Zhumakhan[1] [1]Al Farabi Kazakh National University
	Optimization of the Periodic Exploitation of Gas Wells for Enhancing Condensate Recovery - A. Nekrasov[1], A. Ermolaev[1], E. Zemziylin[1]*, A. Shmarina[1], I. Kharitonov[1] [1]Gubkin Oil and Gas University
	Optimization of Reservoir Surveillance Strategies Under Uncertainty: An Application to the Design of Sparse Monitoring Surveys - E. Barros[1]*, O. Leeuwenburgh[1] [1]TNO
	Adaptive Nonlinear Solver for a Discrete Fracture Model in Operator-Based Linearization Framework - K. Mansour Pour[1]*, D. Voskov[1] [1]Delft University of Technology
	Feature Selection for Reservoir Analogues Similarity Ranking As Model-Based Causal Inference - A. Voskresenskiy[1]*, N. Bukhanov[1], Z. Filippova[1], R. Brandao[2], V. Segura[2], E. Vital Brazil[2] [1]LLC "GazpromNeft STC"; [2]IBM Research
	Geology Realism Control in Automated History Matching - I. Matveev[1]*, G. Shishaev[1], G. Eremyan[1], D. Konoshonkin[1], V. Demyanov[2], S. Kaygorodov[3] [1]Tomsk Polytechnic University; [2]Heriot-Watt University; [3]Gazpromneft STC
	Experimental Study of the Multi-Agent Simulation Model of Technical Assistance of Oil Wells Grid's Communication Network - K. Aidarov[1,2]*, G. Balakayeva[1] [1]Al-Farabi Kazakh National University; [2]University of International Business
	Incorporating Uncertainties in A Model-Based Data-Driven Framework Using Transfer Learning - T. Van de Poll[1], E. Barros[1], W. Langenkamp[1], R. Fonseca[1]* [1]TNO
	A Two-Scale Model for Coupled Flow in Partially Filled Karst Conduit Networks in Carbonate Rocks - M.R. Correa[1]*, V.H. Fialho[1], M. Murad[2] [1]University of Campinas; [2]Laboratorio Nacional de Computacao Cientifica
	Forecast Reliability Using Approximate Computer Models - M.H. Rammay[1]*, Y. Chen[2], A. Elsheikh[1] [1]Heriot-Watt University; [2]Geoscience Research Centre, Total E&P
	A Bayesian Statistical Approach to Decision Support for TNO OLYMPUS Well Control Optimisation under Uncertainty - J. Owen[1]*, I. Vernon[1], R. Hammersley[2] [1]Durham University; [2]Emerson Automation Solutions
	Predictive Analytics for Well Performance Predictions from Historical Production Data with Application to Volve Model - S. Mohd Razak[1]*, B. Jafarpour[1] [1]University of Southern California
	History Matching of Time-Lapse Deep Electromagnetic Tomography with A Feature Oriented Ensemble-Based Approach - K. Katterbauer[1]*, A. Marsala[1], M. Maucec[1], Y. Zhang[2], I. Hoteit[2] [1]Saudi Aramco; [2]King Abdullah University of Science and Technology
	Derivative-Free Trust-Region Optimization for Field Development - T. Silva[1]*, M. Bellout[1], C. Giuliani[2] [1]Department of Geoscience and Petroleum, NTNU; [2]Department of Automation and Systems Engineering, UFSC
	Machine Learning Modelling of Oil Production and Novel Approach for Dealing with Data Non-Stationarity - D. Prokhorov[1]*, N. Gurbatov[1] [1]Deeplight

Poster Presentations | Tuesday 15 September / Wednesday 16 September 2020

10:10	**Analytical Methods of Fractional Calculus for Modeling of Non-Homogeneous Reservoirs with Complex Structure -** R. Gazizov[1]*, S. Lukashchuk[2] [1]"rn-bashnipineft" Llc; [2]Ufa State Aviational Technical University
	Estimation of the Chance of Success of A Four-Dimensional Seismic Project for A Developed Oil Field - A.T.F.S. Gaspar[1]*, S.M.G. Santos[1], C.J. Ferreira[1], A. Davolio[1], D.J. Schiozer[1] [1]University of Campinas
	History Matching with Simultaneous Change of Petrophysical Rock Properties and SCAL Functions Honoring the Rock Types - R. Manasipov[1]*, B. Jenei[2] [1]myr:conn solutions GmbH; [2]Clausthal University of Technology
	Designing Petrophysicist-Oriented Neural Networks: Quantifying Uncertainties and Highlighting Difficult Interpretation Areas - F. Basier[1]*, K. McLean[1], R. Pelling[1] [1]Emerson E&P Software
	Maximizing the Findings of Oil & Gas Reserves Using Bell Curve Method (Case Study in Indonesia) - A.A. Azizurrofi[1]*, A. Asnidar[1] [1]SKK Migas
	Efficient Adjoint-Based Well-Placement Optimization Using Flow Diagnostics Proxies - S. Krogstad[1]*, H. Møll Nilsen[1] [1]SINTEF
	Techniques for Modelling Intelligent Well Controls - B.A. Queiroz[1], L.C. Oliveira[1]*, B. Horowitz[1] [1]Federal University of Pernambuco
	Integrated Reservoir Modeling Approach for Determination Optimal Program of Development - A. Lisitsyn[1]*, D. Torba[1], A. Bochkarev[1], A. Gula[1], A. Glazyrina[2] [1]Phystech Geoservice; [2]Gazpromneft STC
	Application of Dynamic Parametrization Algorithm for Non-Intrusive History Matching Approaches - A. Mukhin[1]*, M. Elizariev[1], N. Voskresenskiy[1], A. Khlyupin[1] [1]Moscow Institute of Physics and Technology

10:10	**Practices of Building and Using Integrated Gas Field Proxy Models -** D. Borisov[1]*, V. Khilko[1] [1]LLC «Gazpromneft Science and Technology Centre»
	Two-Stage Ensemble Kalman Filter Approach for Data Assimilation Applied to Flow in Fractured Media - M. Liem[1]*, P. Jenny[1] [1]Institute of Fluid Dynamics, ETH Zurich
	A New Algorithm for Finding CRMP Coefficients - A. Bekman[1]*, S. Stepanov[1], A. Ruchkin[1], D. Zelenin[1] [1]Tyumen Petroleum Research Center
	Adaptive Moment Estimation Framework for Well Placement Optimization - Y. Arouri[1]*, M. Sayyafzadeh[1] [1]The University of Adelaide
	Upscaling Low Salinity Water Flooding in Heterogenous Reservoirs - H. Al-Ibadi[1]*, K. Stephen[1], E. Mackay[1] [1]Heriot-Watt University
	Testing of Vulkan Visualization for Geo-Models on Mobile Devices and Desktop Systems with Ray Tracing GPUs - M. Mustafin[2], O. Turar[1]*, D. Akhmed-Zaki[1] [1]University of International Business; [2]Kazakh National University
	Analytical Method for Effectiveness Quantification of Conformance Improvement Operations - F. Barganski[1]*, A. Malkov[2], W. Jelinek[2], A. Venkatraman[3], D. Davudov[4] [1]Technical University Clausthal; [2]Wintershall Dea; [3]Resermine Inc.; [4]University of Oklahoma
	History Matching under Uncertain Geologic Scenarios with Variational Autoencoders - A. Jiang[1], B. Jafarpour[1]* [1]University of Southern California
	Statistical Net Hydrocarbon Thickness Map Combined with BHPSO for Efficient Well Placement Optimization Under Uncertainty - A. Harb[1]*, K. Ghorayeb[1] [1]American University of Beirut



Oral Presentations | Thursday 17 September 2020

08:00	**Registration and Welcome Coffee**		
PENTLAND EAST		**PENTLAND WEST**	
Multiscale Modeling and Simulation I H. Hajibeygi (Delft University of Technology)		**Enhanced Oil Recovery I** P. Samier (Total)	
08:30	**ThA01 - Application of Diffuse Source Basis Functions for Improved Near Well Upscaling -** C. Liu[1], K. Nunna[1], M.J. King[1]* [1]Texas A&M University	**08:30**	**ThB01 - Effects of Lumping on the Numerical Simulation of Thermal-Compositional-Reactive Flow in Porous Media -** M. Cremon[1]*, M. Gerritsen[1] [1]Stanford University
08:55	**ThA02 - Sub-REV Homogenization of Flow in Fractured Media -** P. Jenny[1]* [1]ETH Zurich	**08:55**	**ThB02 - Impacts of Gas Trapping and Capillarity on Oil Recovery by Near-Miscible CO2-WAG -** G. Wang[1]*, G. Pickup[1], K. Sorbie[1], E. Mackay[1], A. Skauge[2] [1]Heriot-Watt University; [2]University of Bergen
09:20	**ThA03 - Dynamic Saturation Reconstruction for Multiphase Flow by Time-Of-Flight Fill Functions -** O. Moyner[1]* [1]SINTEF Digital	**09:20**	**ThB03 - A Novel Nanoparticle Retention Model in Porous Media for IOR & EOR Applications -** H. Solano[1]*, M. Icardi[2], N. Bueno[1,3], J. Mejia[1] [1]Universidad Nacional De Colombia; [2]University of Nottingham; [3]Copérnico S.A.S.
09:45	**ThA04 - A Massively Parallel Restriction-Smoothed Basis Multiscale Solver on Multi-core and GPU Architectures -** A. Manea[1]*, T. Almani[1] [1]Saudi Aramco	**09:45**	**ThB04 - Scaling Foam Flow Models in Heterogeneous Reservoirs for A Better Improvement of Sweep Efficiency -** F. Douarche[1]*, B. Braconnier[1], B. Bourbiaux[1] [1]IFP Energies nouvelles
10:10	**Coffee Break**		
Multiscale Modeling and Simulation II D. Gunasekera (Schlumberger)		**Enhanced Oil Recovery II** D. Guérillot (Texas A&M University at Qatar)	
10:40	**ThA05 - Comparison Between Algebraic Multigrid and Multilevel Multiscale Methods for Reservoir Simulation -** H. Nilsen[1]*, A. Moncorge[2], K. Bao[1], O. Møyner[1], K. Lie[1], A. Brodtkorb[1] [1]Sintef; [2]Total E&P	**10:40**	**ThB05 - Thermodynamically Consistent Equation-of-State for Microemulsion Systems -** D. Magzymov[1]*, R.T. Johns[1] [1]The Pennsylvania State University
11:05	**ThA06 - Fast Time-Stepping Scheme for Streamline-Based Transport Simulations -** F. Keller[1], D. Meyer[1]* [1]ETH Zurich	**11:05**	**ThB06 - Analysis of Low Salinity and Polymer Synergies in a Dynamic Pore-Scale Network Simulator -** E. David[1]*, S. McDougall[1], E. Mackay[1] [1]Heriot-Watt University
11:30	**ThA07 - Free-Space Well Connection Method for Efficient Coupling of Wells and Grid Cells of Arbitrary Geometry -** R. Pecher[1]* [1]Emerson Roxar	**11:30**	**ThB07 - On the Robust Value Quantification of Polymer EOR Injection Strategies for Better Decision Making -** M. Oguntola[1,2]*, R. Lorentzen[2] [1]University of Stavanger; [2]NORCE - Norwegian Research Centre AS
11:55	**ThA08 - Modified Peaceman Correction for Improved Calculation of Polymer Injectivity in Coarse Grid Numerical Simulations -** I. Tai[1]*, A. Muggeridge[1], M.A. Giddins[2] [1]Imperial College London; [2]Schlumberger	**11:55**	**ThB08 - Permeability and Adsorption of Light Gas through Microporous Shale Kerogen Using Molecular Simulations -** F. Oulebsir[1]*, R. Vermorel[1], G. Galliero[1] [1]University of Pau and Pays de l'Adour
12:20	**ThA09 - A Muti-Timestep Domain Decomposition Method Applied to Polymer Flooding -** R.S. Tavares[1]*, R.B.D. Santos[1], S.A.D. Lima[1], A. Dos Santos[1], J.H.D.S. Mariano[1] [1]Universidade Federal Do Rio Grande Do Norte	**12:20**	**ThB09 - Effect of Capillary Pressure on Equilibrium and Mass Transfer in Tight Liquid-Rich Systems -** S. Torabi[1]*, T. Tsotsis[1], K. Jessen[1] [1]University of Southern California
12:45	**End of Conference**		

IMPORTANT DATES

Early Registration Deadline	15 May 2020
Full Paper Submission Deadline	1 June 2020
Late Registration Deadline	15 August 2020
ECMOR XVII	14-17 September 2020

REGISTRATION

REGISTERED AND PAID	UNTIL 15 MAY	FROM 16 MAY - 15 AUGUST	FROM 16 AUGUST
EAGE Green Member[1,5]	€ 1,045	€ 1,145	€ 1,245
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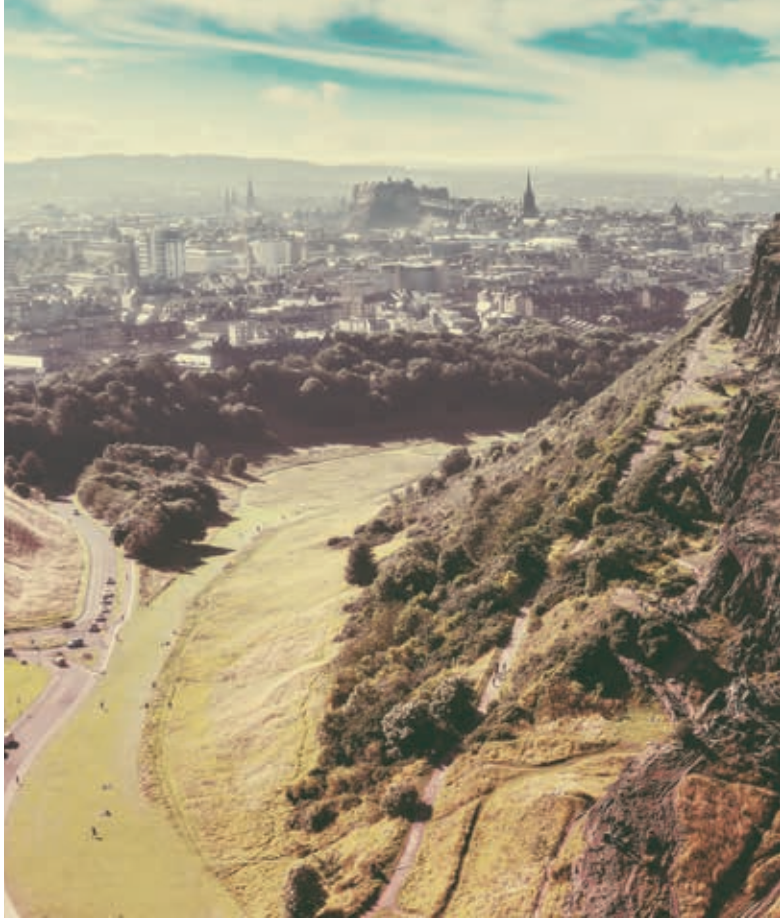
Registration will not be accepted unless accompanied by full payment. After receipt of registration and payment, delegates will receive a registration confirmation e-mail, which should be exchanged on-site for a badge is a valid/unique e-mail address is supplied. Please note that no entrance is granted to unregistered, or unpaid guests. For companies that want to do a group booking/payment, please contact the registration department at registration@eage.org.

SOCIAL PROGRAMME

To complement the conference, a networking reception will be organized as well as a conference dinner at a special location. Keep a close eye on our website to check the most up-to-date information about the social programme of ECMOR XVII.



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