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GEOSCIENTISTS &
ENGINEERS

TNO innovation
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EAGE/TNO Workshop on OLYMPUS Field Development Optimization

7 SEPTEMBER 2018 • BARCELONA, SPAIN

- **Final Announcement & Programme**

WWW.EAGE.ORG

SCIENTIFIC COMMITTEE

Jan-Dirk Jansen	Delft University of Technology
Ernesto della Rossa	ENI
Remus Hanea	Equinor
Alexandre Emerick	Petrobras
Rahul-Mark Fonseca	TNO

OVERVIEW

This interactive workshop brings together experts on field development optimization methods to evaluate and demonstrate the potential of state-of-the-art optimization under uncertainty to industry, research organizations and academia. Together with the partners in the ISAPP2 research consortium, TNO has developed and launched the OLYMPUS Field Development Optimization Challenge in early 2017.

WHY YOU SHOULD ATTEND

- You will gain insights into state-of-the-art techniques for field development and reservoir management under uncertainty.
- You will have direct access and discussions with leading experts from academia, operators and technology providers about future technology challenges and research directions.

TOPICS

This one-day workshop provides the platform for all participants to present and discuss their results. The challenge consists of 3 exercises on optimization under uncertainty:

- Well control optimization
- Well placement optimization
- Joint optimization of well placement and control

IMPORTANT DATES

Deadline Early Registration	15 June 2018
ECMOR XVI Conference	3–6 September 2018
EAGE/TNO OLYMPUS Workshop	7 September 2018

PROGRAMME

Oral Presentations | Friday 7 September 2018

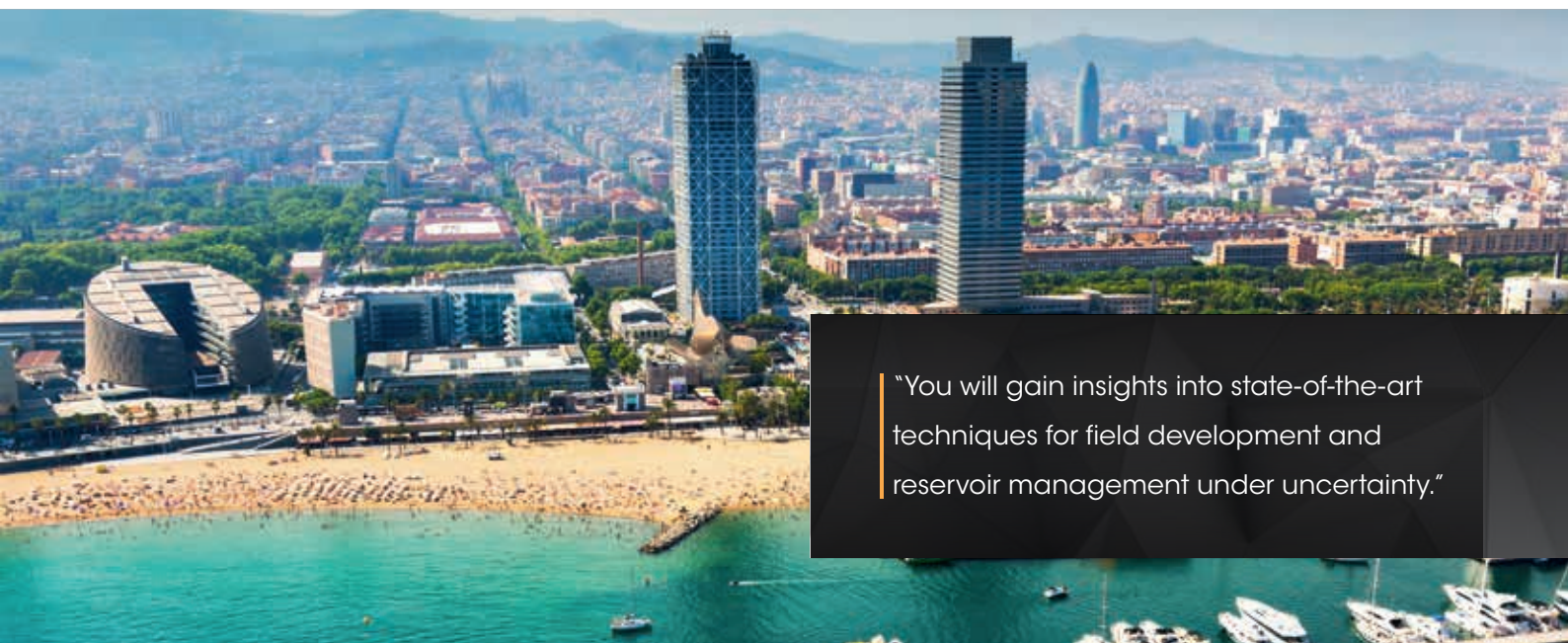
AGORA 2	
OLYMPUS Field Development Optimization I	
08:30	Registrations
08:50	EAGE/TNO Opening & Introduction
09:00	Keynote Speaker - Field Development Optimization: Past, Present and Future Challenges - Prof. Albert Reynolds (University of Tulsa)
09:30	TNO 01 - OLYMPUS Optimization Under Geological Uncertainty - Y. Chang (IRIS), R.J. Lorentzen* (IRIS), G. Naevdal (IRIS), T. Feng (Equinor)
09:55	TNO 02 - Defining 3D Reservoir Well Patterns As Functions Of Geology For Robust Design And Faster Optimization - P. Bergey* (Total S.A.)
10:20	TNO 03 - Well Control Optimization Of The OLYMPUS Case Using MRST And OPM - S. Krogstad* (Sintef), H.M. Nilsen (SINTEF), A.F. Rasmussen (SINTEF)
10:45	Coffee Break
11:15	TNO 04 - Application Of A Hierarchical And Partitional Global Optimization Workflow For The OLYMPUS Field Development Optimization - J.E. Onwunalu* (Thebibia Reservoir Solutions)
11:40	TNO 05 - Stochastic Optimization Strategies Applied To OLYMPUS Benchmark - V.L.S. Silva* (Petrobras), M.A. Cardoso (Petrobras), D.F.B. Oliveira (Petrobras)
12:05	TNO 06 - Standardized Workflow Design For Field Development Plan Optimization Under Uncertainty - R. Schulze-Riegert* (Schlumberger), A. Anton (Schlumberger), J. Baffoe (Schlumberger), D. Geissenhoener (Schlumberger), K. Jin Ng (Schlumberger), M. Nwakile (Schlumberger), S. Skripkin (Schlumberger), C. Meulengracht (Schlumberger), M. Whymark (Schlumberger)
12:30	Lunch & Posters (in Agora 1)
OLYMPUS Field Development Optimization II	
13:45	TNO 07 - Well Control, Field Development And Joint Optimization Using $(\mu+\lambda)$ Evolutionary Strategy Algorithm And A Stochastic Rank - M. Sayyafzadeh* (The University of Adelaide), Z. Alrashdi (The University of Adelaide)
14:10	TNO 08 - OLYMPUS Field Development Optimization Challenge - American University Of Beirut - A. Harb (American University of Beirut), H. Kassem (American University of Beirut), K. Ghorayeb* (American University of Beirut)
14:35	TNO 09 - Generalized Field Development For The OLYMPUS Reservoir Under Geologic Uncertainty - F. Zou (University of Southern California), A. Jahandideh* (University of Southern California), S. Navabi (University of Southern California), B. Jafarpour (University of Southern California)
15:00	Coffee Break & Posters
15:45	Discussion: Lessons Learned & Way Forward
16:15	Closing & Presentation Ceremony
16:30	Networking Drinks

Poster Presentations | Friday 7 September 2018

The posters will be presented during lunch and the afternoon coffee break at Agora 1. All attendees are invited to take this opportunity to learn, enjoy the food and interact with the poster presenters.

AGORA 1	
Poster Session TNO	
12:30	<p>TNO P01 - Ensemble-Based Optimization Of Well Trajectory Design In The OLYMPUS Field - E. Barros (TNO), A. Chitu (TNO), O. Leeuwenburgh* (TNO)</p> <p>TNO P02 - Methods For Reducing Parameter Solution Space And Accelerated Solution For The OLYMPUS Challenge - P. Gregory (Schlumberger), N. Chugunov (Schlumberger), K. Rashid (Schlumberger), R. Schulze-Riegert* (Schlumberger), M.J. Williams (Schlumberger), W.J. Bailey (Schlumberger), A. Sadowska (Schlumberger), M.A. Giddins (Schlumberger), H. Williams (Schlumberger)</p> <p>TNO P03 - Hierarchical Multigrid Methods For Production Optimization Of The OLYMPUS Field - S. Horsholt* (Technical University of Denmark), H.M. Nick (Danish Hydrocarbon Research and Technology Centre), J.B. Jørgensen (Technical University of Denmark)</p> <p>TNO P04 - Drainage Strategy Analytics On The OLYMPUS Field - J. Saestrom* (Resoptima)</p> <p>TNO P05 - Optimal Rate Allocation Using Capacitance Resistance Models And Open Source OLYMPUS Tools - D.L. Moreno Bedoya* (Ecopetrol), G.A. Bautista (Ecopetrol), M.A. Gómez (None), F.O. Betancourt (Ecopetrol)</p> <p>TNO P06 - Well Placement Constraint Methodology For Re-Framing Optimization Problem Into Customized Subproblems For Improved Solve - M.C. Bellout* (NTNU), B.S. Kristoffersen (NTNU)</p> <p>TNO P07 - A Model-Based Workflow For Improved Decision Alternatives: OLYMPUS Field Development Optimization Challenge - S. Tanaka* (Chevron Energy Technology Company), Z. Wang (Chevron Energy Technology Company), J. He (Chevron Energy Technology Company), X.H. Wen (Chevron Energy Technology Company)</p>

<p>TNO P08 - A Multi-Level Clustering Method For Field Development Optimization Under Uncertainty - A. Awotunde* (King Fahd University of Petroleum & Minerals), N. Sibaweihi (King Fahd University of Petroleum & Minerals)</p> <p>TNO P09 - OLYMPUS Challenge - J.W.O. Pinto* (Federal University of Pernambuco), J.A.R. Tueros (Federal University of Pernambuco), B. Horowitz (Federal University of Pernambuco), S.M.B. Silva (Federal University of Pernambuco), R.B. Willmersdorf (Federal University of Pernambuco)</p> <p>TNO P10 - Ensemble-Based Optimization With Localized Temporal Contributions To Update Direction - A. Khrulenko* (IRIS), A. Zolotukhin (Gubkin Russian University of Oil and Gas)</p> <p>TNO P11 - OLYMPUS Challenge - Coventry University - J. Carter* (Coventry University), M. Turner (Zenotech Simulation Ltd), J. Talbot (Heriot-Watt University)</p> <p>TNO P12 - A Stochastic And Scalable Field Development Optimization Pipeline With Distributed Computing Systems - R. Khaninezhad* (Terra.ai), R. Canon (Terra.ai)</p> <p>TNO P13 - Efficient Large Scale Optimization Under Uncertainty With Multiple Proxy Models - N.H. Goodwin* (Essence Analytics)</p> <p>TNO P14 - Application Of Machine Learning Techniques And Genetic Algorithms Methods To Oil Reservoir Development And Production Op - M.A. Dada* (In Salah Gas), M. Mellal (In Salah Gas)</p> <p>TNO P15 - Optimal Rate Allocation Using Open Source Optimization Tools - D.L. Moreno Bedoya* (Ecopetrol)</p> <p>TNO P16 - Optimized Field Development Of OLYMPUS Model Using Nexus - Z. Noor* (Halliburton), Z. Gu (Halliburton)</p> <p>TNO P17 - OLYMPUS Field Development Optimization Study - KFUPM - R.A. Khan* (King Fahd University of Petroleum & Minerals), A. Asad (King Fahd University of Petroleum & Minerals), M.S. Jamal (King Fahd University of Petroleum & Minerals), S.A. Zaidi (King Fahd University of Petroleum & Minerals)</p> <p>TNO P18 - Bayesian Analysis And Decision Theory At Durham University - J.D. Owen* (Durham University), I. Vernon (Durham University)</p>



"You will gain insights into state-of-the-art techniques for field development and reservoir management under uncertainty."

REGISTRATION

REGISTERED AND PAID	Until 15 JUNE 2018	16 JUNE - On-site
EAGE Member	€ 275	€325
EAGE Student Member	€ 125	€150
Non-Member	€ 325	€ 375
Student Non-Member	€ 175	€200

- Members please note: To qualify for the member registration fee, your EAGE membership dues for 2018 must have been paid and confirmed.
- A special registration rate is available for this workshop when attending ECMOR too.
- 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.
- Please note: Student non-members cannot be older than 34 years of age (when registering).
- The non-member fee includes EAGE membership for the remainder of 2018.

VENUE

The EAGE/TNO Workshop on OLYMPUS Field Development Optimization will be held in the World Trade Center of Barcelona, which has a unique location on the Moll de Barcelona, in the old harbour area of Barcelona called Port Vell (meaning old port in Catalan). The venue is only a five minute walk from La Rambla and close to the historic centre.

WTC

Edif. Este, Moll de Barcelona, s/n, 08039 Barcelona, Spain
<http://www.wtctbarcelona.com/en/>

ECMOR XVI

Every two years, the European Conference on the Mathematics of Oil Recovery (ECMOR) gathers applied mathematicians and geoscience engineers from both academia and industry to focus on recent advances in geological and reservoir modelling. 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. In 2018 ECMOR will take place in Barcelona from 3-6 September. Attending ECMOR XVI can be done in conjunction with the EAGE/TNO Workshop on OLYMPUS Field Development Optimization.

SPONSORSHIP

Sponsorship opportunities are available to suit all budgets. Please visit our website for further details. To request a copy of the sponsor brochure, please contact us at sponsoring@eage.org or visit the event website.

CONTACT

For more information on the background of the challenge and the dataset consisting of reservoir models, please visit: www.isapp2.com/optimization-challenge.html.

For information on the workshop please contact the EAGE Europe Office at eage@eage.org, call us at +31 88 9955055 or visit the event website at www.events.eage.org



See you in Barcelona!

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