EAGE

EUROPEAN ASSOCIATION OF GEOSCIENTISTS & ENGINEERS

Seventh EAGE High Performance Computing Workshop

25-27 SEPTEMBER 2023 • LUGANO, SWITZERLAND

- **First Announcement & Call for Abstracts**

WWW.EAGE.ORG

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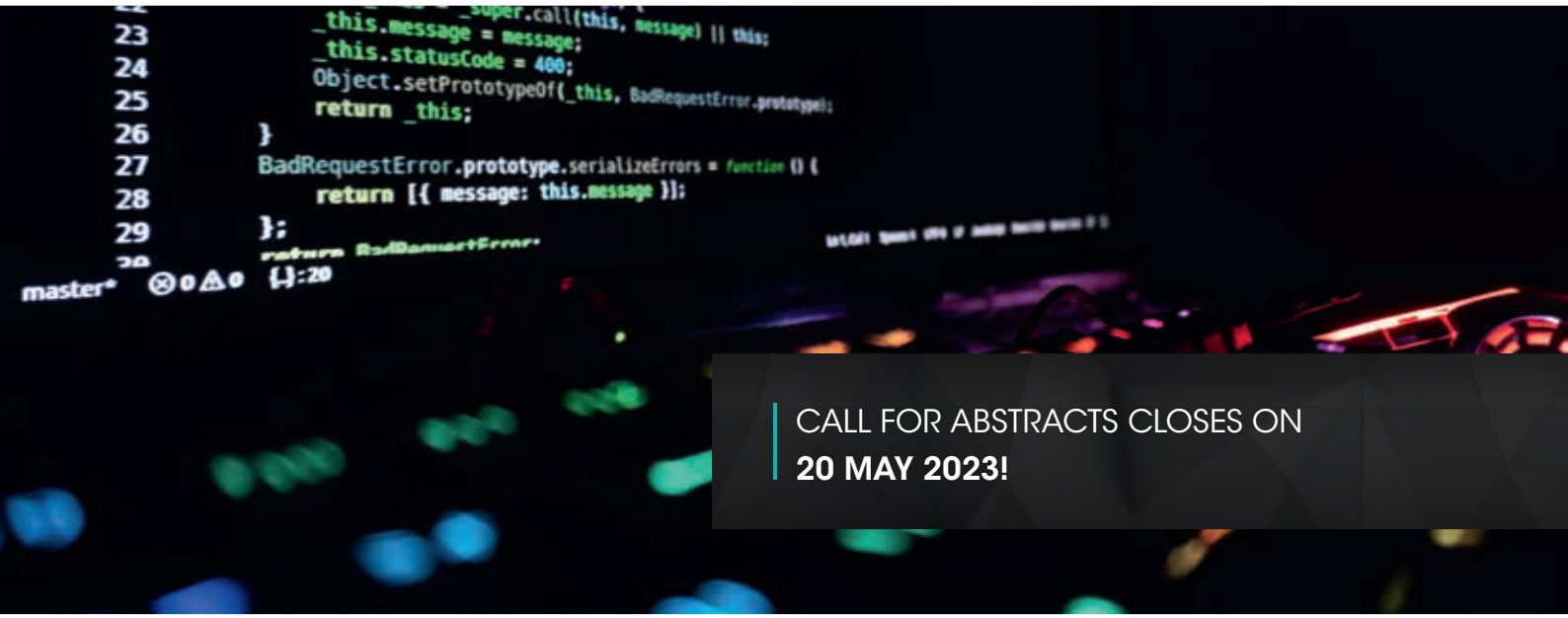
WORKSHOP OVERVIEW

High-Performance-Computing plays a leading role in our current energy business and will be of critical importance for a successful energy transition. Looking across multiple industries, our business undoubtedly exploits the largest High-Performance-Computing capacity. HPC helps in seeking higher productivity, lowering costs and reducing risk by making better use of huge amounts of data through high-performance simulation and data analytics. Algorithms performing as fast as possible on the best available hardware have a direct impact on many of the decisions shaping our business.

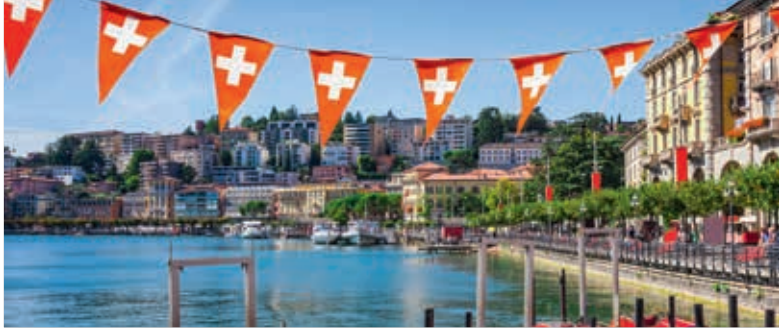
Simulation and modeling are our principal mechanisms for the accurate location of hydrocarbons, their optimal production and soon their decarbonisation. The reliance on data for making better business decisions at a lower cost is becoming critical. Seismic data are explored using traditional imaging algorithms such as Reverse Time Migration (RTM), Full Waveform Inversion (FWI) and Electromagnetic Modeling (EM) to illuminate the hidden subsurface of the earth and reservoir simulation is used to optimally produce fields and predict the time evolution of assets. Both are highly compute-intensive activities, which push the leading edge of HPC storage, interconnect and calculation. The industry is evolving on several fronts. Changes in the underlying hardware with the advent of co-processing or accelerator technologies and many-core CPUs are challenging practitioners to develop new algorithms and port old ones to reap the most performance from modern hardware. Implementation and application of software engineering best practices and DevOps becomes key to support production while keeping pace with a fast-changing environment. The explosion of data and the recent rapid development in machine learning (ML) are leading to non-traditional ways of interpreting seismic and reservoir data. The emergence of significantly faster reservoir simulation technology is breathing new life into multi-resolution and uncertainty quantification workflows.

The ability to create and mine these data relies on the optimal utilization of supercomputers. This is the result of various synergies between industries, companies, departments and, most importantly, people. HPC IT departments (or even HPC cloud solution providers) are focused on minimizing turnaround times for various workloads, but also deploy the various compute architectures in a cost competitive fashion while adapting to the fast-paced innovation in the semiconductor industry. Research groups and software application teams in both academia and industry develop new algorithms and keep abreast with the latest while adapting and optimizing existing or new production frameworks to the latest parallel programming models, languages and architectures. The workshop brings together experts in order to understand state-of-the-art key applications employed in the upstream industry and anticipate what ambitions are enabled by increased computational power.

The 3-day workshop will feature both oral presentations and quick lightning talks, panel sessions and keynotes from the leading experts in the industry, as well as plenty of discussion sessions embedded into the program.



CALL FOR ABSTRACTS CLOSES ON
20 MAY 2023!



TOPICS

The Call for Abstracts will open on 20 March 2023 and the deadline to submit abstracts is **20 May 2023.**

Geosciences & HPC

- Seismic Imaging, Modeling & Inversion
- Seismic Processing
- Reservoir Modeling and Simulation
- Electromagnetic Modeling and Inversion
- Joint Inversion of Geophysical and Engineering Data
- Digital Rock Physics
- Upstream Data Visualization (Distributed and Remote Visualization)
- Designing Upstream Applications for Exascale Computing

Performance Analysis and Optimization

- HPC Case Histories and Field Studies
- Energy Efficient Computing
- Mixed Precision Computing
- Numerical Methods and Solvers
- Data Intensive Computing (High Performance I/O and File Systems)
- Fabrics for Upstream HPC

Emerging HPC Technologies

- System Architectures for Exascale Computing
- Software Libraries for Exascale Computing
- High-Performance IoT-based solutions
- High-Performance Cloud Computing (HPCC)
- High-Performance Data Analytics, Machine Learning and Deep Learning
- Convergence and Overlapping of HPC and Data Analytics
- Combining Physics with AI
- Software Stacks
- Next Generation Programming Models and Languages
- Quantum Computing
- Neuromorphic Computing

HPC for the Energy Transition

- Solar Power Plant, Wind Farm, Geothermal & Hydroelectric Energy
- Electrical Power Grid & Grid Energy Storage
- Carbon Capture and Storage
- Weather Modelling
- Green Hydrogen
- Fusion Simulation

IMPORTANT DATES

Call for Abstracts Open	20 March 2023
Call for Abstracts Close	20 May 2023
Technical Programme Available	15 July 2023
Registration Open	15 July 2023
Early Registration Deadline	09 August 2023

SPONSORSHIP

To view the full range of sponsorship opportunities available at the Seventh EAGE High Performance Computing Workshop, visit the workshop website by scanning the QR code:

CONTACT

For more information on the workshop, please get in touch with the EAGE MEA team via middle_east@eage.org or +971 4 369 3897.

REGISTRATION FEES

REGISTERED AND PAID	Early untill 09/08/2023	Regular until 09/09/2023	Late until 25/09/2023
EAGE Green Member	€ 1000	€ 1200	€ 1450
EAGE Bronze/Silver/Gold Member	€ 850	€ 1050	€ 1300
EAGE Platinum Member	€ 850	€ 850	€ 850
Non-Member	€ 1100	€ 1300	€ 1550
EAGE Green Student Member	€ 500	€ 550	€ 600
EAGE Bronze/Silver/Gold Student Member	€ 425	€ 475	€ 525
Student Non-Member	€ 525	€ 575	€ 625

Members please note: To qualify for the member registration fee, your EAGE membership dues for 2023 must have been paid and confirmed. The processing time for membership applications or renewals is 10 working days.
To qualify for the reduced student registration fee:

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

The Non-member fee includes EAGE membership for the remainder of 2023 (31/12/2023). This membership will be activated shortly after the event.
Student Non-members cannot be older than 34 years of age (when registering).
Green membership status gives you a € 80 discount (€ 25 for students) on the Non-member fee for each EAGE event registration; starting from the Bronze status, you can benefit from an even greater reduced EAGE member registration fee. Find here for more information on the recognition programme.
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 UAE.
EAGE reserves the right to cancel the workshop due to low participation. In this case, payment will be refunded in full.

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