

Second EAGE Data Processing Workshop

INNOVATION AND ADVANCEMENTS IN MULTI-DOMAIN DATA PROCESSING

6-8 OCTOBER 2025 · BARCELONA, SPAIN

Programme



TECHNICAL COMMITTEE

Davide Calcagni (Co-Chair)	ENI
Steve Pitman (Co-Chair)	Business Consultant
Are Osen	Aker BP
Ali Alfaraj	Aramco
Philip Tillotson	bp
Diego Rovetta	Fugro
Alaaeldin Hassan	Independent Geophysical
	Consultant
Essam Heggy	NASA's Jet Propulsion Labora-
	tory & University of Southern
	California
Francesco Grigoli	PISA University
Giovanni Sylos Labini	Planetek
Emilie O'Neill	SLB
Gabriele Busanello	SLB
Roald van Borselen	SHEARWATER GeoServices
Sergio Grion	SHEARWATER GeoServices
Rene Plessix	Shell
John Brittan	TGS
Vanessa Butterworth	TotalEnergies
Sylvain Masclet	Viridien
	-

OVERVIEW

Building upon the successful first EAGE Data Processing Workshop in Cairo we are excited to explore yet further into the depths of data processing in all its domains. In the first workshop we discussed how Seismic Processing has become a foundation stone for all the activity related to the energy industry of the future and the energy transition. Moving from the evergreen 2D and 3D time processing it has been relentlessly evolving into 4D then 4C, becoming an even larger domain via Data Processing inversion techniques and calibration to geotechnical integration in a never slowing pace of innovation. The Energy transition with all the requirements from renewables, critical minerals, decarbonisation, transition fossil fuels is demanding of a huge amount of data processing. The demand for de-risking of multiple ventures requires high resolution data processing of a very thin layer portion of our earths crust where the integration of geological and geotechnical data is paramount.

In this second workshop we will be seeking more emphasis on other forms of data processing. For instance, Satellite imageries and data will become more and more widespread as a backbone for accurate site characterisation in the domain of agriculture and forestry allowing the industry to respect the challenging targets of the decarbonisation pathway.

The significant leap forward in data processing in all its domains has been possible via two main enabling factors: Data acquisition technology advancements and the availability of an unprecedented amount of Computing Power. It is this latter aspect which gave us the idea to join forces with our co-conspirators in high performance computing in Barcelona, enabling us to jointly explore new options for data manipulation.

The healthy debate on data processing kicked off in Cairo with valuable input from many experts in their respective fields. Come to Barcelona and enjoy a stimulating discussion which promises to open new insights to data processing being the life blood of the energy industry and beyond!

TOPICS

06 & 08 October 2025

- Advancements in acquisition technologies and their implications for enhanced data processing
- Pushing the boundaries of Data Processing
- Innovations in Seismic Imaging and Evolving Data Processing Workflows
- Addressing regional data processing and imaging challenges - Europe, Africa & the Middle East
- Advancements and future direction of Al/ML in data processing and imaging
- Advances in Reservoir Characterisation and Reservoir oriented processing
- Challenges and Enhancements in Velocity Model Building
- Processing and imaging applications for the energy transition
- Data processing & imaging quantifying improvements in quality
- Lessons to be learned from space/ Earth observation data processing
- Non-seismic Data processing technology
- Processing and imaging benchmarks: benchmarking approaches and results
- Computer science case histories on the industrial implementation of new processing and imaging technologies

07 October 2025: Joint Session: Leveraging the Computing Revolution in the Al era

The relentless pace of change of HPC technologies, to which the Geosciences have always been accustomed to, is now compounding with the extraordinary acceleration brought about by artificial intelligence. Every day new opportunities for innovation in data processing pipelines emerge, very often accompanied by new technological challenges. At the same time, data density and resolution are constantly increasing, and the latency between data acquisition and processing is constantly shrinking and even becoming non existent when we process data on the edge. This joint session will try to address the landscape of this new and unprecedented scenario. How are the HPC and data processing communities reacting? Is there a convergence path that can maximize benefits without disrupting established data processing ecosystems? Are there any lessons we can learn from past revolutions, such as when we borrowed GPUs from game consoles? Has generative Al already had a transformative impact on our data, just like it is having on text, sound, images, and video? As the evolution of HPC hardware is inevitably increasingly driven by AI requirements, is there a viable way to leverage it to speed-up conventional and well established data processing approaches, or is it time for a radical paradigm change?

Join us for a groundbreaking joint session, featuring an exclusive guided tour of the Barcelona Supercomputing Centre—an experience like never before!



OPENING ADDRESS SPEAKER



Prof.Dr. Ir. C.P.A. (Kees) Wapenaar Emeritus Professor, Section of Applied Geophysics and Petrophysics, Department of Geoscience and Engineering Delft University of Technology

KEYNOTE SPEAKER



Song hou Head of AI Lab Viridien

PANEL DISCUSSION

Panel Session: Innovation and Advancements in Satellite Earth Observation for Geoscience (Missions, Sensors and Application) Monday, 6 October 2025 | 12:15 - 13:30 (UTC+2)

Moderator



Giovanni Sylos Labini Chief Executive Officer Planetek Italia

Panelists



Dell'elce Gianluca Head of Geodynamics and Geophysical Monitoring Dept. ENI



Emmanuel Pajot Secretary General European Association of Remote Sensing Companies (EARSC)



Juan Tomas Hernani CEO **SATLANTIS**

JOINT SESSION SPEAKERS

Opening Address Speaker



Edmondo Orlotti Chief Strategy Officer Core42

Keynote Speaker



Bertrand Duquet Senior Advisor **TotalEnergies**

Invited Speakers



Matteo Ravasi Senior Research Advisor and Al/MLOps Engineer Shearwater Geoservices



Florent Pautre Manager of Computational Science Team, Viridien



TECHNICAL PROGRAMME

Oral Presentations | Monday, 6 October 2025

MAN	ILA MEETING ROOM
08:00	Registration and Welcome Coffee
08:30	HSSE & Opening Remarks by event Co-Chairpersons - Davide Calcagni (ENI) & Steve Pitman (Business Consultant)
08:40	Opening Address - Prof. Dr. Ir. C.P.A. (Kees) Wapenaar (Delft University of Technology)
Enho Session	ion 1 (Part I) - Challenges and Incements in Velocity Model Building on Chairs: Davide Calcagni (ENI) & ert Van De Coevering (Oxy)
09:10	Multi-parameter FWI - Fundamental and Applications - J. Brittan ^{1*} , Ø. Korsmo ² , N. Chemingui ³ , S. Crawley ³ ¹ TGS; ² TGS; ³ TGS
09:30	Application of PS Reflection Waveform Inversion to Ocean Bottom Data from Offshore Norway - 0.E. Aaker ^{1*} , Ø. Pedersen ¹ , E.B. Raknes ¹ ¹ Aker BP
09:50	Onshore Complex Fold/Thrust Belts Near Surface Velocity Model Building Effecting Deeper Reservoir Imaging - A. Riaz¹, D. Bannister¹* ¹Eifgeosolutions Ltd
10:10	Unlocking new Reservoir Insights with FWI - S. Masclet ^{1*} , Y. Aziez ¹ , A. Montagud ¹ ¹ Viridien
10:30	Elastic Full Waveform Inversion Workflow for Model Building and High Resolution Imaging - R. Plessix ^{1*} , J. Cao ² , D. Datta ² , V. Goh ² , A. Gomes dos Santos ² , M. Huiskes ¹ , Y. Liu ² , X. Shang ² ¹Shell Global Solutions International Bv; ²Shell International Exploration and Production Inc.
10:50	Morning Coffee Break & Group Photo Opportunity for DPW
11:20	Integrated workflow for joint fault and horizon extraction driven by machine learning - G. Loginov¹, K. Obaid², A. Triki¹, M. Khalil¹, S. Hou¹* ¹Viridien, ²ADNOC
11:40	Data Driven Image Enhancement for the Drilling De-risking in the Pre-salt Exploration,, Gulf of Suez, Egypt - 1. Mihaljevic ^{1*} , A. Sazykin ¹ , M. Salheen ¹ , C. Tu ¹ , A. Karvelas ¹ , A. Menari ¹ , G. Busanello ¹ 1SLB
12:00	Discussion Session / Session Q & A
in Sc (Miss Intro	el Session: Innovation and Advancements itellite Earth Observation for Geoscience sions, Sensors and Application) - And duction erated by Giovanni Sylos Labini (Planetek Italia) Panelists:
12.10	Dell'elce Gianluca, ENI Emmanuel Pajot, EARSC Juan Tomas Hernani, SATLANTIS
13:15	Panel Discussion / Q&A

14:50	D Enhanced Seismic Imaging with LAD-Based LSM: a Case Study - I. Sharabi ¹ , A. Vigner ^{2*} , M. Shustak ¹ ¹ AspenTech Subsurface Science & Engineering; ² AspenTech Subsurface Science & Engineering	
15:10	Afternoon Coffee Break	
15:40	Elastic MP-FWI imaging for Vp, P-impedance and Vs/ Vp using OBN data offshore West Africa - M. Kobylarski ^{1*} , J. Chaloner ¹ , M. Micu ¹ , B. Chowdhury ¹ , W. Hickey ¹ , K. Kraus ¹ ¹ DUG Technology	
16:00	Discussion Session / Session Q & A	
16:30	Closing Remarks / Close of Day 1	

Oral Presentations | Tuesday, 07 October 2025

VIIIA	ANGEL	A MFFTI	NG ROOM
7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7			

SESSION 2 - POSTER SESSION

Second Party Production

Reducing Risks through Seismic Inversion and comprehensive Prospectivity Analysis - N. Desgoutte^{1*}, V. Thomas¹, N. Lucet¹, R. Baillet¹

¹Beicip Franlab

Reviving legacy 4D Seismic Data to Reveal Subtle Oil Slumping Signals in the Grane Field - M. Wilk-Lopes^{1*}, G. Sarsengaliyeva¹, A. Handzlik-Walat¹, H. Neffati Rouai¹, G.R. Hall², F. Büker², M. Beiki²

¹SLB; ²Equinor

PVA Method - a New Approach for Phase Velocity Analysis of Rayleigh Waves - A. Costa¹, P. Pizzuti¹, R. Costa¹*, F. Rodrigues¹, M. Tschoepke¹
¹AFC Geofisica Ltda

Pitfalls and Limitations in the Statistical Analysis of High-Frequency Imaged Data - M. Hussein Kamel, W. Mohamed Mabrouk, A. MOHAMED^{1*} 'Sawaed UAE

Optimizing Reservoir Simulations with Cloud-Based HPC: A Scalable and Cost-Efficient Approach - G.A. Haugland 1*
1Cegal

A Modified Sobolev-Norm Loss for Physics-Informed Seismic Wave Modeling - R. Rodrigues^{1*}, G. Araujo¹, H. Yviquel¹, J. Costa² ¹State University of Campinas; ²Universidade Federal do Pará

Enhancing Energy sector Cloud-based Computer Vision with Multi-Instance GPU - L. Boillot¹, A. Amrani¹, D. Klahr¹*
¹TotalEnergies

Acoustic Wave Modeling Using the Astaroth Framework - 0. Ladino¹, B. Spinelli Coelho¹, A. Brasil Vieira Wyzykowski¹*, L. Soares² ¹Supercomputing Center for Industrial Innovation, SENAI CIMATEC;

	*Repsol Sinopec		
Sess	Session 2 - BSC/CNS Guided Tour		
08:30	Bus departs Hotel H1898 with Groups A & B		
09:00	Arrival at BSC grounds - Groups A & B		
09:00	Group A - BSC visit / Group B - wait at Vertex/ Garden		
09:45	Group A - Finish BSC visit		
09:45	Group B - BSC Visit / Group A returns to hotel		
10:30	Bus departs hotel with Groups C & D		
11:00	Arrival at BSC grounds - Groups C & D		
11:00	Group C - BSC visit / Group D - wait at Vertex/ Garden		
11:45	Group C - Finish BSC visit		
11:45	Group D - BSC visit / Group C- wait at Vertex/ Garden		
12:30	Group C&D finish; bus returns to hotel		
13:00	Lunch Break at EL NIDO Restaurant (Seated Buffet Lunch)		

13:30 Lunch Break -EL NIDO Restaurant (Seated Buffet Lunch)

Session 1 (Part II) - Challenges and Enhancements in Velocity Model Building

Oral Presentations | Tuesday, 7 October 2025

Joint Session - Leveraging the Computing Revolution in the AI era

Session Chairs: Davide Calcagni (ENI) &

	Nicola Bienafi (ENI)		
	14:00 Opening Address - High Performance Compute in the Al Edomondo Orlotti (Core42)		
	14:30	Keynote 1 - Turnaround Time Reduction of Velocity Model Building Flows - Bertrand Duquet (TotalEnergies)	
15:00 Next-Gen Geophysics: How Al Hardware is Reshaping Computational Methods - M. Ravasi ^{1*} , I. Vasconcelos ² , L. Casasanta ³ 1Shearwater GeoServices		Computational Methods - M. Ravasi ^{1*} , I. Vasconcelos ² , L. Casasanta ³	
	15:20	Technology Roadmap- Where are you Going with an Industry Led by the Al? - F. Pautre ^{1*} 'Viridien	

Discussion Session / Session Q & A

16:10 Afternoon Coffee Break

17:45

Close of Day 2

MANUA MEETING DOOM

Gala Dinner - My Way Restaurant

Session 3: Borehole Data Processing & **Reservoir Characterisation**

& John Brittan (TGS)

16:30	Automated Fracture Identification in Borehole Image Logs Using YOLO and PCA-Based Anomaly Detectione - S. Acharya ^{1*} Norwegian University Of Science And Technology	
16:50	Enhancing Far-Field Acoustic Logging Imaging Using Receivers' Rotation Correction Algorithm - M. Alsharif ^{1*} , N. Albasheer ¹ , L. Liu ² , H. AlSalem ¹ , T. Tonellot ¹ 'Saudi Aramco, Dhahran; ² Aramco Research Centre - Beijing, Aramco Asia	
17:10	Utilizing Surface Distributed Acoustic Sensing (S-DAS) for PP and PS Imaging: A North Sea Case Study - D. Brager ^{1*} , M. Wilk-Lopes ¹ , R. Bachrach ² , S. Sonika ³ , C. Thorgersen ¹ , E.B. Raknes ⁴ , Y. Ivanov ⁴ 1SLB; 2SLB; 3SLB; 4Aker BP	
17:30	Discussion Session / Session Q & A	
17:40	Closing Remarks	

Oral Presentations | Wednesday, 8 October 2025

MANILA MEETING ROOM		
08:00	Welcome Coffee	
08:30	Opening Remarks for Day 3 by Co-Chairs & Review of Day 2	
Session 4: Innovation in Seismic Imaging Session Chairs: Sergio Grion (Shearwater Geoservices) & Are Osen (Aker bp)		
08:40	Multi-dimensional Seismic Data Analysis in an Advanced Reservoir Characterization Workflowsbe - C. Reiser ^{1*} ¹Sharp Reflections	
09:00	Beyond Finite-Difference: Spectral Element-FWI for High- Fidelity Imaging - L. Casasanta ^{1*} , C. Purcell ¹ , S. Grio ¹ , C. Boehm ² , L. Krischer ² , M. Afanasiev ² ¹ Shearwater Geoservices; ² Mondaic AG	
09:20	Up-going data improvements through the attenuation of converted PS waves - D. Rosa ^{1*} , B. Webb, N. Bienati ¹ Eni S.p.A. E&P	
09:40	Discussion Session / Session Q & A	

Oral Presentations | Wednesday, 8 October 2025

Session 5 (Part III) - Challenges and **Enhancements in Velocity Model Building**

Session Chairs: Sylvain Masclet (Viridien) & Vanessa Butterworth (TotalEnergies)

10:00	4D FWI on 25,000 Nodes – a Clair Case Study - D. Cavalin1,
	P. Tillotson ² , E. Cho ¹ , F. Gao ¹ , L. Saxton ¹ , D. Davies ¹ , L. Wang ² ,
	A. Vaz²*
	¹ TGS; ² BP Exploration and Operating Company Ltd

Joint 3D Elastic FWI of OBS and DAS-VSP - H.A.E. Malak1*, G. Apeland¹, P.A. Olsen², Y. Biryaltseva², R. Dehghan-Niri², H. Westerdahl², A. Cooke³, C. Thorgersen¹, J. Rickett³, J. Xu³, X 7han3 O Lewis3 ¹SLB; ²Equinor; ³SLB

10:40 Morning Coffee Break

Session 6 - Advancements and Future **Direction of AI/ML**

Session Chairs: Prof. Francesco Grigoli (University of Pisa) & Emilie O'Neill (SLB)

Keynote 2 - Transforming Geoscience Workflow with Generative Al: Opportunities and Challenges - Song Hou
(Viridien)

11:40 Relevant Training Data for ML - Leveraging the Existing Image - A.K. Evensen1*, O. Kolbjørnsen1 ¹Aker BP

12:00 A Deep Learning Waveform-Based Earthquake Detector for DAS data - S. Gaviano¹, D. Pecci¹, E. Rebel², F. Grigoli³ ¹Seismix Srl; ²TotalEnergies, CSTJF; ³University of Pisa, Department of Earth Science

Encoding Spatio-Temporal Coordinates in Convolutional Neural Networks for Seismic Data Processing -M. Fernandez^{1*}, N. Ettrich¹, M. Delescluse², J. Keuper³ ¹Fraunhofer ITWM; ²École Normale Supérieure; ³Offenburg University

12:40 Discussion Session / Session Q & A

13:00 Lunch Break -EL NIDO Restaurant (Seated Buffet Lunch)

Session 7 - Processing Applications for the **Energy Transition**

Session Chairs: Norbert van de Coevering (Oxy) & Anthony Vaz (BP)

14:00	Hybrid Seismic Data for Overburden and Reservoir Seismic
	Study over the UK Hewett CCS Project - B. Webb1*
	¹ENI

Mitigating Sparse Acquisition Limitations with FWI Imaging for Shallow Hazard Detection in Suriname - M. Aquino1*, H. Prigent¹, N. Salaun¹, M. Pouget¹ ¹Viridien

14:40 Improved Imaging using Angle Dependent Ray-based Algorithms for 3D Prestack Depth Migration - S. Klarner^{1*}, A. Elistratov¹, M. Baykulov²
¹Geogals OÜ; ²Ad Terra Consultancy

Afternoon Coffee Break

Multiparameter FWI Imaging using Full Wavefield in a Shallow Water Environment: Investigations towards Efficient **CCS Monitoring -** O. Lewis^{1*}, A. Cooke¹, J. Juan¹, Y. Biryaltseva², F. Agnar Maaø², R. Dehghan-Niri², H. Westerdahl², M. Soledad Yanez Sanchez² ¹SLB: ²Equinor 15:50 Discussion Session / Session Q & A

16:10 **Closing Remarks** 16:20 **Close of Workshop**

REGISTRATION



REGISTERED AND PAID	Early Registration 2/5/25 - 1/9/25	Regular Registration 2/9/25 - 23/9/25	Late Registration 24/9/25 - 8/10/25
EAGE Green Member ^{1,5}	1095	1350	1555
EAGE Bronze/Silver/Gold Member ^{1,5}	940	1195	1395
EAGE Platinum Member ^{1,5}	940	940	940
Non-member ³	1195	1450	1655
EAGE Student Green Member ^{1,2,5}	395	445	495
EAGE Student Bronze/Silver/Gold Member ^{1,2,5}	320	370	420
Student Non-member ^{2,3,4}	420	470	520

VENUE

Hotel 1898 LA RAMBLA

La Rambla, 109, First Floor, Ciutat Vella, 08002 Barcelona, Spain

SPONSORS

Platinum Sponsor



Coffee Break Sponsor



Registration Sponsors



shearwater

SPONSORSHIP

To view the full range of sponsorship opportunities available at the event, please get in touch at corporaterelations@eage.org.



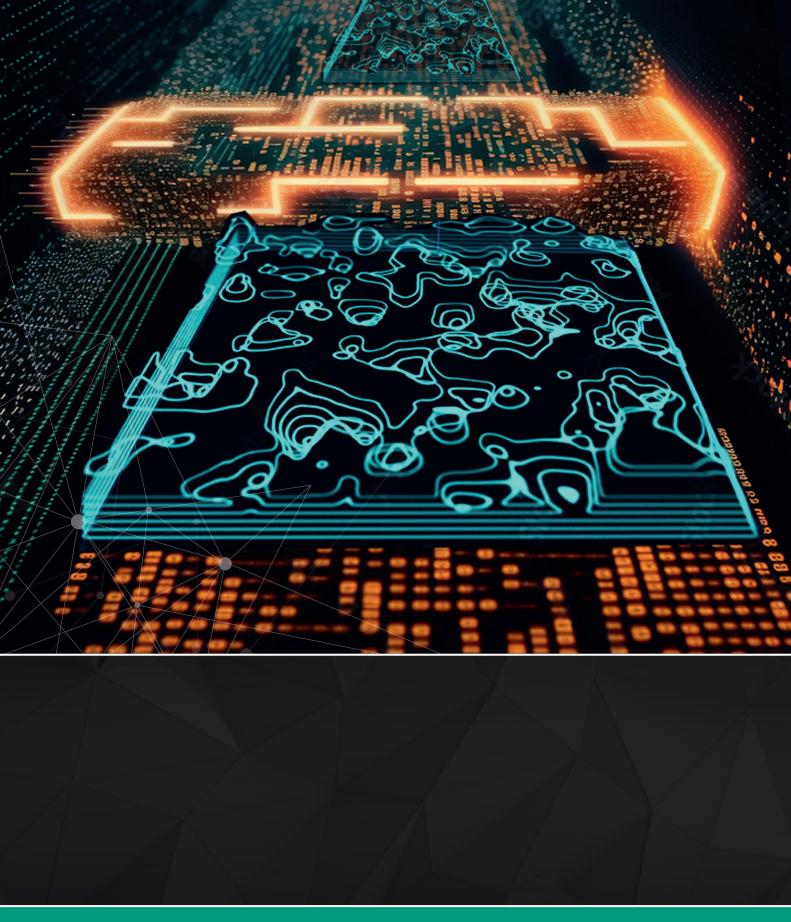
CONTACT

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.





NOTES	



EUROPE OFFICE | MIDDLE EAST/AFRICA OFFICE | ASIA PACIFIC OFFICE

+60 3 272 201 40 +57 310 8610709 ASIAPACIFIC@EAGE.ORG AMERICAS@EAGE.ORG

AMERICAS OFFICE

HEAD OFFICE • KOSTERIJLAND 48 • 3981 AJ BUNNIK • THE NETHERLANDS • +31 88 995 5055 • EAGE@EAGE.ORG

www.eage.org









