

Hybrid Conference

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28-29 October 2025

Digital Geoscience 2025: Digital Innovations in Geoscience Fieldwork

CONFERENCE PROGRAMME



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Tuesday 28 th October 2025		
0830-0855	Registration opens	
0855-0900	Welcome address	
SESSION ONE: AI AND MACHINE LEARNING		
0900-0940	KEYNOTE: In the with the old, in with the new: Integrating analog and digital methods for outcrop and borehole characterization	Zane Jobe, <i>Colorado School of Mines</i>
0940-1000	SynSection2: Adaptive Synthetic Data Augmentation with Unified Domain Transfer and Segmentation in Carbonates Petrography	Axel Ransinangue. <i>University of Bordeaux – UMR EPOC</i>
1000-1020	Unsupervised Geological Core Image Classification: Extracting Rich Features for Consistent Analysis.	Rihame Nbri, <i>TotalEnergies</i>
1020-1040	Coffee Break	
1040-1100	Deep Edge Detection for Fracture Characterization in Outcrop	Thomas Daniel Seers, <i>Texas A&M University at Qatar</i>
1100-1120	Augmenting Digital Fieldwork: LLM-Enhanced Interpretation of Digital Outcrop Models	David Hodgetts, <i>VRGeoscience Limited</i>
1120-1140	Multi-Scale Reservoir Characterization Using Machine Learning, Digital Core Integration, and 3D Outcrop analogues: Insights from the Volve Field	Claudia Ruiz-Graham, <i>Imaged Reality LTD</i>
1140-1200	Can combining geochemical and geophysical measurements from Geological Survey Ireland's Tellus surveys improve a machine learning algorithm's ability to predict the bedrock lithology below?	Laura Smith, <i>Technological university Dublin</i>
1220-1320	Lunch	
SESSION TWO: APPLICATIONS OF DIGITAL OUTCROP GEOSCIENCE		
1320-1400	KEYNOTE: Recovering the Past: Tips and Workflows for 2D and 3D Models from Vintage Media	William Hawkins, <i>Pix4D</i>
1400-1420	A web-based geological mapping tool	Keith Milne (<i>virtual</i>)
1420-1440	Synthetic Well Logs from Virtual Outcrops: a Database-Driven Approach	Guillermo Bello, <i>University of Aberdeen (UoA)</i>
1440-1500	A statistical approach for building comparable reservoir models from virtual outcrops	Iuliia Kapustina, <i>University of Aberdeen (UoA)</i>
1500-1520	Coffee Break	
1520-1540	Multi-Scale 3D Outcrop Models for Digital Mapping and Reservoir Characterization of the Tumey Giant Injection Complex, California	Gustavo Zvirtes, <i>University of Aberdeen (UoA)</i>
1540-1600	Virtual Outcrop Model at the gate of prehistory: structural geology of the backbone of Romanelli Cave, Southern Italy	Stefano Tavani, <i>University of Florence</i>
1600-1620	Digital Outcrops Project, Solitario Dome, West Texas, USA	Jon Frederic Blickwede, Teyra GeoConsulting LLC / Sul Ross State University
1620-1640	DFN Modelling Utilising Photogrammetry Data Acquisition in Digital Geoscience	Fiona McLean & Mark Cottrell, <i>WSP UK Limited</i>

Wednesday 29 th October 2025		
0900-0930	Registration opens	
0930-0940	Welcome address	
SESSION THREE: TEACHING AND LEARNING		
0940-1020	KEYNOTE: Perceptions on virtual outcrops for structural geology teaching and research	Clare Bond, <i>University of Aberdeen</i>
1020-1040	SeeOutcrop: A realtime collaborative, Multi User Virtual Fieldtrip and Outcrop Interpreter Web App	Kusumah, E.P. Epo Kusumah, <i>Universitas Pertamina (Virtual)</i>
1040-1100	Virtual Field Trips five years on from the pandemic: What have we learnt and where are we going?	Jessica Pugsley, <i>University of Aberdeen (UoA)</i>
1100-1120	Coffee Break	
1120-1140	Enhancing Geoscience Fieldwork Through Virtual Outcrop Technologies: Applications and Impacts in Subsurface Education	Georg Warrlich, <i>Shell Global Solutions International (Virtual)</i>
1140-1200	Five years of V3Geo: Experiences from building a global virtual outcrop repository	Simon J. Buckley, <i>Fonix Geoscience AS</i>
SESSION FOUR: ADVANCES IN DIGITAL GEOSCIENCE METHODS		
1200-1220	Digital Geological Outcrop model as a tool for structural analysis of North-West Mount Sharp region (Gale crater, Mars)	Susanna Tonoian, <i>INAF-OAPD Astronomical Observatory of Padova (virtual)</i>
1220-1240	Multi-Scale Geological Mapping: From Space to Outcrop	Robert Waltham, <i>University of Aberdeen</i>
1240-1340	Lunch	
SESSION FOUR: ADVANCES IN DIGITAL GEOSCIENCE METHODS continued...		
1340-1420	KEYNOTEOpen source software for digital field data collection at the BGS	John Stevenson
1420-1440	Application of drone technology to improve geometric fault characterization and refine fault global scaling laws	Ofelia Soledad Silio, <i>University of Oslo</i>
1440-1500	Applied GIS and Systems Development for Engineering Geological Practices: Hong Kong case studies	Caleb Sang, <i>Ove Arup & Partners Hong Kong Limited (Virtual)</i>
1500-1520	Smarter Marine Operations: From Spreadsheets to Digital Survey Management	Giles Thompson, <i>Seekat</i>
1520-1540	Coffee Break	
1540-1600	Digital geological mapping: integrating digital and traditional data capture methods for multi-scale geological assessment, a case study of the Strathmore Basin	Tara L. Stephens, <i>British Geological Survey</i>
1600-1620	Extracting Geometric Data from Virtual Outcrops for improved Sedimentological Understanding	Sadeq Gatea, <i>University of Aberdeen</i>
1620-1640	Reproducible outcrop mapping and interpretation	Brian S. Burnham, <i>VRGeoscience Limited</i>
1640-1700	General discussion	
1700-1710	Wrap up	

Alteration Zone Mapping in Pacitan Regency, East Java, Using Spatial Data Analysis Through Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) and Landsat 8 Imagery	Chandra Tri Oktyawardhana, Universitas Pembangunan Nasional "Veteran" Yogyakarta
Rapid Flood Assessment in Jakarta Through Sentinel-1 SAR and Automated Otsu Thresholding	Abdullah Rasyid, Universitas Pembangunan Nasional "Veteran" Yogyakarta
Fracture architecture of carbonate anticlines revealed by Virtual Outcrop Models in the Umbria–Marche Apennines	Marco Urbani, University of Perugia
Multi-Scale 3D Outcrop Models for Digital Mapping and Reservoir Characterization of the Tumey Giant Injection Complex, California	Gustavo Zvirtes, University of Aberdeen
Forecasting Subseasonal Wildfire Intensity Using Novel TabNet-GPR and GNN-LSTM Architectures	Ishan Nagpal, Edison Academy Magnet School
Digital Transformation of Ground Data Group	Vicky Corcoran, AtkinRealis

Co-Convenors:

Dr. David Hodgetts - VRGeoscience Limited
Dr. Brian Burnham - VRGeoscience Limited
Prof. Clare Bond - University of Aberdeen
Jon Blickwede - Teyra GeoConsulting LLC
Dr. Tara Stephens - British Geological Survey

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