Salt Tectonics in the Energy Transition

23rd – 24th September 2024

HYBRID CONFERENCE PROGRAMME

The Geological Society

Monday 23rd September		
09:00-09:15	Opening & Welcome	
09:15-09:35	Paleogeography and tectono-stratigraphic evolution of the Aptian Ezanga-Loémé evaporites along the proximal domain of the south Gabon-Congo-Cabinda margin	Alexandre Pichat (*TotalEnergies / Univeristé de Pau et des Pays de l'Adour*)
09:35-09:55	Depositional models for giant salt deposits and their implications for the safety and stability of hydrogen storage cavern	Frank J Peel *(The University of Texas at Austin)*
09:55-10:15	Basinwide development of km-scale gypsum networks: evidence for heterogeneity in evaporitic depositional systems	Jimmy Moneron *(University of Oxford)*
10:15-10:35	Salt Tectonics synchronous with salt deposition in the Santos Basin (Ariri formation, offshore Brazil)	Naim Célini *(Akkodis)*
10:35-11:10	**Break**	
11:10-11:30	Geomechanical Insights into Salt-Bearing Rifted Margins: Numerical Modeling and Implications for Geological Storage	Mahdi Bakhtbidar *(Institut de Recerca UB-Geomodels)*
11:30-11:50	The Birth, Evolution, and Death of Polygonal Diapir Arrays: Insights from the Norwegian Central North Sea	Mar Moragas *(Geosciences Barcelona (GEO3BCN-CSIC), Barcelona, Spain)*
11:50-12:10	3D Geometry and Evolution of Salt Walls and Surrounding Minibasins: Contrasting Styles from the Norwegian Central North Sea	Umut Isikalp *(University of Bergen)*
12:10-12:30	Fifth-order characterisation of sedimentology within halokinetic sequences	Kathryn Amos (y) ***Virtual*
12:30-13:30	**Lunch**	
13:30-13:50	Variable diapir origins and histories in the Basque Pyrenees: implications for intrasalt deformation	Mark G Rowan *(Rowan Consulting Inc)*
13:50-14:10	Architecture and controlling factors of intra-salt layers in diapiric structures: A numerical modelling approach	Manel Ramos *(Université de Pau et des Pays de l'Adour / University of Bergen)*
14:10-14:30	The role of intra-salt stratigraphy and lithological variability on the internal and external geometry of salt bodies – a numerical modelling approach	Leonardo Pichel
14:30-14:50	Influence of intra-Zechstein Supergroup (ZSG) composition on internal deformation styles: Examples from the United Kingdom and Norwegian Continental Shelves	Harya Dwi Nugraha *(University of Bergen / Center Sustainable Geoscience and Outreach (CSGO) / Universitas Pertamina, Indonesia)*
14:50-15:10	A semi-automated method to interpret layered evaporite sequence (LES) lithologies based on well-logs	Gabriela Salomao Martins (*Imperial College London (currently at AtkinsRéalis)*
15:10-16:10	**Break**	
16:10-16:30	Welding a layered evaporite sequence	Christopher A.L. Jackson *(Imperial College London (currently at WSP))*
16:30-16:50	Understanding the Timing and Rates of Quaternary Deformation of Salt Structures in the Romanian Eastern Carpathians: Insights from Radiocarbon Dating	Dan Mircea Tamas *(Babes-Bolyai University)*
16:50-17:10	Diversity of turtle anticlines: from seismic examples to field observations	María Carrión-Jiménez *(Universitat Autònoma de Barcelona)*
17:10-17:30	Revisiting the structural evolution model of the Gina Krog Field: Implications for near-field exploration in a mature field amidst for the energy transition	Asdrúbal Bernal *(Equinor ASA)*
17:30	**End of Day One**	

Tuesday 24th September		
09:00-09:05	Opening words	
09:05-09:35	Microphysics of rocksalt deformation: State of the art and implications for solution mining and energy storage	Chris Spiers
09:35-09:55	Internal Deformation of a thin Layered Evaporite Sequence: Implications for hydrogen storage (Neuquén Basin, Argentina)	Rodolfo Uranga *(Universitat de Barcelona)*
09:55-10:15	A lifecycle approach to hydrogen storage cavern design and execution – examples from Project HyStock in The Netherlands	Allard Van der Molen *(Nobian)*
10:15-10:35	Subsurface Energy Storage Potential in Salt Structures in the UK and Dutch Sectors of the Southern North Sea	Sjastri Hansen *(Royal Holloway, University of London)*
10:35-11:10	**Break**	
11:10-11:30	The Seismic Imageability of Internal Salt Architectures and Inclusions	Chris Willacy *(Shell Research Limited)*
11:30-11:50	On the role of thermal stresses in salt caverns for fast cyclic hydrogen storage	Herminio Tasinafo Honorio
11:50-12:10	Potential and challenges of offshore salt caverns for energy storage in the southern North Sea	David Waltham *(Royal Holloway, University of London)*
12:10-12:30	The energy potential in salt	Jørgen Clausen *(SaltPower)*
12:30-13:30	**Lunch**	
13:30-13:50	Underground Hydrogen Storage in salt– views and lessons from a mining authority	Elisenda Bakker *(State Supervision of Mines)*
13:50-14:10	3D Geological Modelling of the Internal Structure of the Asse Salt Diapir, Germany	*York Fisser (Federal Institute for Geosciences and Natural Resources (BGR)*
14:10-14:30	Salt as a Host Rock for Caverns and Radioactive Waste Storage: Multiscale Challenges and Insights from Coupled Numerical Modeling	Tobias S. Baumann *(smartTectonics GmbH)*
14:30-15:10	Salt-embedded basins as geothermal reservoirs: a petrological and thermophysical study of the sedimentary succession of the Estopanyà and Boix synclines (South-Central Pyrenees, NE Spain)	Pedro Ramirez-Perez *(SGR Geologia Sedimentària / IR Geomodels, Universitat de Barcelona (UB)) **Virtual*
15:10-15:50	**Break**	
15:50-16:10	Understanding the riddles of energy and CO2 geostorage in and around salt structures from field examples in Portugal.	Pedro Barreto *(Geo Logica XYZ)*
16:10-16:30	Tectono-Stratigraphy Of The Norwegian-Danish Basin: Halokinetic Control On The Plays For CO2 Storage	Simon Blondel *(University of Oslo)*
16:30-16:50	Salt diapirs and minibasins of the Hummer Fault Zone, offshore Southern Norway – structural evolution and CO2-storage perspectives	Torsten Hundebøl Hansen *(University of Oslo)*
16:50-17:10	Catastrophic leakage through thick evaporite seals	Joe Cartwright *(University of Oxford)*
17:10-17:30	Closing Remarks	
17:30	**End of Day Two**	

Author	Poster Title
Sophie Godefroy *(SLB)*	Simulating long-term CO2 geological storage in depleted reservoirs and aquifers
Emma Bedda *(British Geological Survey)*	Zechstein halites as a potential hydrogen storage solution – Interim Results
Naomi Van Den Ameele *(Delft University of Technology)*	Quantification of the probability of induced seismicity associated with large-scale underground hydrogen storage in Dutch salt formations
Rachel E. Brackenridge *(University of Aberdeen)*	A drill down into the Zechstein: learnings from legacy hydrocarbon wells to understand drilling and salt cavern placement hazards.
Daria Dohan *(Babe-Bolyai University)*	Salt tectonics in the Transylvanian Basin and implications for energy transition
Naïm Célini *(Akkodis*)	Reproducing deformation of complex salt stratigraphies using analogue modelling: new insights in the frame of the energy transition
Antonio Teixell *(Universitat Autònoma de Barcelona)*	High-resolution structure and salt-sediment interaction around an exposed salt sheet
Prosper Deitch *(Vrije Universiteit Amsterdam)*	Discovery of Palaeogene Halokinesis in the North Sea Basin
Daniele Blancone *(University of Stavanger)*	Hydrogen storage in salt caverns: a first screening of the potential in the Southern Norwegian North Sea

Co-convenors:

Dr. Gonzalo Zamora (Repsol, Spain)
Dr. Oliver Duffy (Chevron, Houston, USA)
Dr. Oriol Ferrer (University of Barcelona, Spain)
Dr. Sian Lianne Evans (University of Oslo, Norway)
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THANK YOU

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