

Fracture Gradient – Fact or Fiction?

25-26 March 2025

The Geological Society, Burlington House, Piccadilly, London

Provisional Programme

Day One	
08.30	Registration
08.50	Welcome
	Session One: Fracture Gradients: High-Level Observations
09.00	KEYNOTE: Fundamentals of fracture gradient estimation: From exploration to field abandonment Tony Addis
09.40	Fracture pressure definition and application Gareth Yardley
09.55	Quantifying the Fracture Gradient from Leak-off pressure Federica Ferrari
10.10	Integrating physical models of borehole Leak-Off pressures Matt Hauser
10.25	Fracture Gradients: How a 'Rule of Thumb' can lead to 40 years of Failure Martin Rylance
10.40	<i>Discussion for 20 min</i>
11.00	BREAK
	Session Two: What do we see and Measure?
11.30	A repository of geomechanical data and fracture pressures for the North Sea Juan Tovar
11.45	Pick and Choose: Standardising Formation Pressure Integrity Test Interpretation Peralta Durango
12.00	Field measurement of fracture pressure in Extended Leak-Off test (XLOT) Ira Ojala
12.15	<i>Discussion for 15 min</i>
12.30	LUNCH
	Session Three: What do we see and Measure? Cont.
13.30	Leak-Off Tests vs In-situ Stresses in the East Irish Sea Basin Tim Wynn
13.45	Tensile strength - does it matter? Some Barents Sea cases Thomas Birchall
14.00	Fracture gradient exceeding overburden gradient in a complex stress state – A case study Rajarajan Naidu
14:15	<i>Discussion for 15 min</i>

	Session Four: Alternative Estimates of In-Situ Stress
14:30	Truths Hidden in Drilling Parameter Data, Relevance to Fracture Gradient, Loss-Events and the Following Discourse Peter Momme
14:45	Re-Examining Vertical Stress Gary D Couples
15:00	Discussion for 10 min
15:10	BREAK
	Session Five: Operational Aspects of Fracture Pressure/Gradient
15:35	KEYNOTE: Geomechanical aspects of fracture gradient modelling from 1D to 3D Juliane Heiland
16:00	Is wellbore breathing a true indicator of fracture gradient in HPHT wells? Tommy Sheldrick
16:15	Practical methods in defining Fracture Gradient in development fields Emil Miraliyev
16:30	The effect of mud additives on fracture gradient Rajarajan Naidu
16:45	Discussion for 15 mins
17:00	Discussion with Panel Q & A
17:30	Drinks reception and open discussion
18:30	End of day one

Day Two	
08.40	Registration
09.00	Review of Day One
	Session Six: Static vs Dynamic Data
09.15	Laboratory Investigation of Failure Criteria in Fractured Rocks in CO₂ Storage Reservoirs Rafael Mesquita
09:30	Laboratory Research on the LOT and the XLOT tests Aadnoy and Erik Karstad
09:45	Discussion for 10 mins
09:55	BREAK WITH COFFEE (POSTER SESSION)
	Session Seven: Reservoir Stress Path
10:45	Pore pressure-minimum horizontal stress coupling estimation in Tunu Field, Lower Kutai Basin, Indonesia Agus Ramhdan
11:00	Discussion of uncertainty in fracture gradient stress path parameter and recovery factor in depleted and recharged reservoirs Sam Green
11:15	Predicting Reservoir Horizontal Stresses and Fracture Gradient in Depleted Reservoir Eirik Kårstad

11:30	Learnings from Successful Drilling in Heavily Depleted HPHT Reservoir with Up to 460 Bar Depletion Jamie Andrews & Trond Heggheim
11:45	Discussion for 15 mins
12:00	KEYNOTE: What determines Shmin: Insights from 2300 stress measurements Jorg Herwanger
12:30	LUNCH
	Session Eight: Fracture Gradient in Deviated Wells and Operational Aspects
13:15	Navigating and Negotiating Fracture Gradient During Drilling and Cementing Operations Alvin Chan
13:30	Models of fracture gradient in boreholes in the presence of natural and induced fractures Mahdi Heidari
13:45	How the prediction of real fracture gradient saved a losses-prone sidetrack Zhi Fang
14:00	Interpretation and Inter-relationships of Extended Leak-Off Test Events: Applications in the Well Construction Process on the Norwegian Continental shelf Devendra Kumar
14:15	Discussion 15 mins
	Session Nine: Prediction of Fracture Gradient Remotely
14:30	Horizontal Stress Estimation during Subsurface Geomechanical Characterisation Michael Anthony Addis
14:45	Combining empirical modelling of fracture gradients with 2D and 3D modelling to reduce uncertainty in the planning and execution of wells. Toby Harrold
15:00	Geomechanical aspects of fracture gradient modelling from 1D to 3D Juliane Heiland
15:15	Discussion for 15 mins
15:30	BREAK
	Session Ten: Applications of Fracture Gradient Measurements
15:50	KEYNOTE: Interdependence of fracture stress with pore pressure - drilling windows, column heights and coupling? Richard Swarbrick
16:15	The application of the Matthews and Kelly (1967) stress ratio in the Barents Sea Stephen O'Connor
16:30	Consonance of Surface and Subsurface Fracture Data in Vindhyan Basin, India, and Its Implications for Hydrocarbon Exploration Dilip Kumar Srivastava
16:45	Discussion for 15 mins
17:00	Discussion with Panel Q & A 20 mins
17:30	Closing remarks and end of conference

Posters	
Preliminary study into Mercia Mudrock mechanical stratigraphy and implications to fault structure Kathryn Page	
A novel approach to enhance well design using minimum horizontal stress estimation by different methods, a case study from WDDM concession, Mediterranean Sea, Egypt Elsherbeny Akram	
Sea Floor Fracturing during Riserless Drilling: Insights from Pilot Hole in the South China Pratap Vikraman Nair	
Fracture Modelling of Well Abandonment Edgar Castillo	
Re-Examining the Wellbore Stress Model and Responses to Internal Pressurisation Gary D Couples	

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