

## W23: Informing Geophysical Exploration with Petrophysics: Processes, Pitfalls and Tools

<b>Coordinator(s)</b>	Jim Austin
<b>Date(s)</b>	Fri, Sep 06
<b>Time</b>	08:45 - 16:45
<b>Location</b>	Crown Perth
<b>Summary</b>	This workshop will investigate the incorporation of petrophysics into geophysical exploration approaches, citing numerous industry case studies across a range of commodities and techniques. It will delve into how fundamental geological processes affect petrophysical properties, explore the pitfalls of scale, and evaluate the strengths and weaknesses of various tools.

### Schedule\*

<u>Topic</u>	<u>Speaker</u>
<b><u>Session 1</u></b>	
Welcome and Introduction	<i>Chris Wijns, @ First Quantum Minerals Ltd</i>
TBC	
Petrophysical Properties of Magmatic Ni-Cu-PGE systems: Fractional Crystallisation, Exsolution and Uplift	<i>Jim Austin, Team Leader @ Potential Field Geophysics, CSIRO Mineral Resources</i>
Anisotropy and Remanence in Iron Formations	<i>Phil Schmidt, Principal @Magnetic Earth (formerly Chief Scientist at CSIRO)</i>
TBC	
<b><u>Session 2</u></b>	
Petrophysical Properties of Porphyry and Granite-related Systems (e.g., skarns, epithermals): Effects of Alteration Zonation	<i>David Clark, Senior Principal Research Scientist @ CSIRO Manufacturing</i>
Petrophysics of Iron Oxide Copper-Gold Systems: Iron, Sulfur, Carbon and Redox	<i>Jim Austin, Team Leader @ Potential Field</i>

#### Terms and conditions

\* Schedule subject to change

Workshops will proceed only if minimum numbers are reached, should a workshop be cancelled that you have paid and registered for, you will be notified and refunded the full amount. Should you wish to cancel a workshop, standard registration cancellation policy applies. Please refer to the AEGC conference website for registration cancellation policy and for further details on registration information <https://2019.aegc.com.au/>



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*Geophysics, CSIRO  
Mineral Resources*

Targeting reduced components of the IOCG family:  
an alternative to the Bullseye Paradigm

*Louise L'Oste Brown,  
Senior Geophysicist @  
Minotaur Exploration*

### Forum on Mobile Petrophysics Lab

#### Session 3

Your Core-scale petrophysics doesn't explain your  
targets or inversions: what now?

*Jarrad Luce, Project  
Geophysicist @ First  
Quantum Minerals Ltd*

Scale dependence of electrical resistivity  
measurements: Case studies on VHMS, Sediment-  
hosted Pb-Zn, Porphyry Cu deposits

*Andrew Fitzpatrick, Chief  
Geophysicist @  
Independence Group NL*

Petrophysics in Mineral Exploration: What can we  
learn from the Petroleum Industry?

*Mike Dentith, Professor @  
School of Earth Sciences,  
University of Western  
Australia*

Seismic Methods in Mineral Exploration:  
Petrophysical differences between Cover and  
Crystalline Basement

*Heather Schijns, Principal  
Geoscientist, Seismic  
Geophysics @ BHP  
Geoscience Centre of  
Excellence*

Petrophysical modelling to explain deep MT  
anomalies: Effects of Pressure and Temperature on  
conductivity

*Klaus Regenauer-Lieb,  
Professor @ School of  
Petroleum Engineering,  
The University of New  
South Wales*

#### Session 4

Incorporating Petrophysics into Voxel inversions

*Glenn Pears, Principal  
Consultant @ Mira  
Geoscience*

Incorporating structural and petrophysical insights  
into Mapping Undercover

*Pete Betts, Professor of  
Structural Geophysics @  
School of Earth,  
Atmosphere, and*

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Dealing with remanence using parametric modelling  
approaches

*Environment, Monash  
University*

*Clive Foss, Principal  
Research Scientist,  
Potential Fields  
Geophysics, @ CSIRO  
Mineral Resources*

**Open Discussion/ Q & A**

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