



# Mineral Physics Group

## Research in Progress Meeting 2026

Wednesday 8<sup>th</sup> July



|             |                                                                                                                                                                                                         |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12:00-12:50 | Registration                                                                                                                                                                                            |
| 12:50-13:00 | Introduction                                                                                                                                                                                            |
| 13:00-13:40 | <b>Benjamin Hess (Invited)</b><br><i>University Of Oxford</i><br>Thermodynamics of Stressed Crystals: Stress–Composition Coupling and its Geological Consequences                                       |
| 13:40-14:00 | <b>Zhuoqi Lucas Li</b><br><i>Imperial College London</i><br>Mineral Boundary Plane Distributions in Basalt and Their Role in Geological Carbon Sequestration                                            |
| 14:00-14:20 | <b>Dongwoo Han</b><br><i>University Of Oxford</i><br>The Magnetic Structure of the Serpentinized Mantle Wedge: A Magnetic Fabric Study on the Sanbagawa Belt, Japan                                     |
| 14:40-15:00 | Refreshment Break                                                                                                                                                                                       |
| 15:00-15:40 | <b>Holger Stuniz (Invited)</b><br><i>University Of Tromsø, University Of Orléans</i><br>Recent Advances in Experimental Quartz Rheology and Consequences for the Plastic Deformation of Other Silicates |
| 15:40-16:00 | <b>Peixue Dou</b><br><i>University College London</i><br>Point Defects as a Control on the Viscosity Jump in the Lower Mantle                                                                           |
| 16:00-16:20 | <b>Estelle Ledoux</b><br><i>University Of Oxford</i><br>The Stishovite to Post-Stishovite Phase Boundary Studied by Stress Cycling Experiments in a Ddac                                                |
| 16:20-16:40 | <b>Siddharth Khan</b><br><i>Laboratoire Magmas Et Volcans, CNRS</i><br>Aluminium Drives Hydrogen Incorporation in Pyrolitic Lower Mantle: Constraints from a Combined FTIR-ERDA-Nanosims Analysis       |
| 16:40-16:55 | <b>Anastasya Shilova</b><br><i>Bruker UK Limited</i><br>Sponsor Presentation                                                                                                                            |
| 16:55-18:30 | Posters and Refreshments                                                                                                                                                                                |

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# Mineral Physics Group Research in Progress Meeting 2026 Thursday 9<sup>th</sup> July



9:00-9:40

**Banusha Kugabalan (Invited)**  
*Imperial College London*  
Determining Palaeostress Signals Using Rock Magnetism.

9:40-10:00

**Yi Li**  
*University Of Oxford*  
Effects of Temperature-Driven Complexion Transitions and Redox Gradients on Grain-Boundary Plane Distributions in Olivine

10:00-10:20

**Lei Liu**  
*Institute Of Earthquake Forecasting, Chinese Earthquake Administration*  
Potential Significance of Iron-Bearing Superhydrous Phase B in the Formation of Mantle Low-Velocity Zones

10:20-10:40

**Emily Wackan**  
*University Of Glasgow*  
Comparisons Between the Trace Element Composition and Magnetic Structure of the Cloudy Zone in the Imilac and Odessa Iron-Nickel Meteorites

10:40-11:00

**Brandon Fish**  
*University Of Oxford*  
Nickel Content of Iron Meteorites

11:00-11:40

Refreshment Break

11:40-12:20

**Zhi Li (Invited)**  
*University College London*  
Predictive Modelling of Chemically Complex Earth-Forming Materials via Deep-Learning-Driven Atomistic Simulations.

12:20-12:40

**Billy Rayner**  
*University College London*  
Liquid Immiscibility in the Fe-O-S Ternary System at High Pressure and Temperature

12:40-13:00

**Yuanjing Li**  
*University College London*  
Light Element Exsolution In Fe-Si-C-(H) System in Planetary Liquid Cores

13:00-14:00

Break

14:00-15:00

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