COMET

CENTRE FOR THE OBSERVATION AND MODELLING
OF EARTHQUAKES, VOLCANOES AND TECTONICS

ANNUAL MEETING 2023

Day 1 – Monday 26 June

12.00 - 12.15	**Arrive at BGS and meeting registration**
12.15 - 13.00	**Lunch**
13.00 - 13.15	**Introduction: COMET Director, Professor Tim Wright**
13.15 - 14:15	**Science Talks 1 (Chair: Professor Tim Wright)**
14:15 - 14.45	**Coffee**
14.45 - 15.15	**Keynote Speaker 1:** **Dr Philippa Mason (Imperial College London)** **‘Understanding why Earth’s closest neighbour, Venus, is so different’**
15:15 - 16:30	**Science Talks 2 (Chair: Professor Juliet Biggs)**
16.30 - 16.40	**EDI Action Group Presentation**
16.40 - 17.30	**Breakout Session: EDI**
17.45	**Coach to Nottingham from BGS**
19.30	**Dinner and COMET Quiz (Canalhouse, Nottingham)**

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ANNUAL MEETING 2023

Day 2 - Tuesday 27 June

08.20 - 09.00	**Coach to BGS**
09.00 - 09.30	**Keynote Speaker 2:** **Dr Danny Hilman Natawidjaja (BRIN Indonesia)** **'An overview of tectonics, active faults, and earthquake hazards of the Indonesian archipelago: recent studies, challenges, and opportunities'**
09.30 - 10.30	**Science Talks 3 (Chair: Professor Don Grainger)**
10.30 - 11.00	**Coffee**
11.00 - 12.15	**Breakout Session: The Next 5 Years of COMET Science**
12.15	**Event Photograph**
12.15 - 13.05	**Lunch**
13:05 - 14:30	**Science Talks 4 (Chair: Dr Sue Loughlin)**
14.30 - 15.00	**Keynote Speaker 3:** **Prof. Dr. Eleonora Rivalta (GFZ, Potsdam)** **'Towards mechanical forecasts of magma pathways, vent locations and induced geophysical signals'**
15.00 - 15.45	**Poster Session 1**
15.45 - 17.15	**BGS Tours (Geological Walkway Tours/Core Store Tours/3D Vis Demos)**
17.15 - 18.15	**Poster Session 2**
18.30	**Coach to Nottingham from BGS**
19.30	**Dinner (Kayal Restaurant, Nottingham)**

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ANNUAL MEETING 2023

Day 3 - Wednesday 28 June

08.20 - 09.00	**Coach to BGS**
09.00 - 10.00	**Science Talks 5 (Chair: Luke Bateson)**
10.00 - 10.30	**Event Response and Preparedness Presentations**
10.30 - 10.45	**Coffee**
10.45 - 11.45	**Breakout Session: Event Response and Preparedness**
11.45 - 12.45	**Parallel Meetings**
12.45 - 13.00	**Feedback and Close**

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ANNUAL MEETING 2023

Presentations

Science Talks 1 - Monday 26 June 13.15 – 14.15 - Chair: Professor Tim Wright

Matthew Watson University of Bristol	In-situ capture of aggregates in volcanic ash clouds
Megan Udy University of Leeds	Magnitude and environmental impacts of explosive volcanic eruptions revealed by forest disturbance and vegetation recovery patterns in satellite datasets
Edna Dualeh University of Bristol	Volcano deformation using InSAR and trying to separate signals
Maximillian Van Wyk de Vries University of Oxford	Large-scale monitoring of slow-moving landslides using optical satellite imagery

Science Talks 2 - Monday 26 June 15.15 – 16.30 - Chair: Professor Juliet Biggs

Manuel Diercks University of Plymouth	N-S and vertical deformation in SW Turkey
Lin Shen University of Leeds	A comprehensive observational database of deformation at global volcanoes for machine learning applications
Neill Marshall University of Oxford	Evidence for strike-slip faulting and surface rupture in the Kura Basin, Azerbaijan
Qi Ou University of Leeds	Large-scale velocity mapping over Tianshan using Sentinel-1 data from 2014 to 2022
Mike Burton University of Manchester	Insights into magmatic processes from satellite-derived SO2 flux time series

Science Talks 3 - Tuesday 27 June 09.30 – 10.30 - Chair: Professor Don Grainger

Tim Craig University of Leeds	Time-variability in seismicity
Tamarah King University of Oxford	Updates on active fault and remote-sensing studies from the Oxford Active Tectonics COMET group
Jessica Hawthorne University of Oxford	Modelling hydrology in borehole strain data
David Pyle University of Oxford	Curating Crises and Sensing Volcanoes: a Public Engagement Project (Online)

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ANNUAL MEETING 2023

Presentations

Science Talks 4 - Tuesday 27 June 13.05 – 14.30 - Chair: Dr Sue Loughlin

Chris Rollins GNS, New Zealand	An integrated earthquake catalogue for Aotearoa New Zealand and its implications for earthquake rates
Isabelle Taylor University of Oxford	Satellite observations of the April 2021 La Soufrière eruption
Juliet Biggs University of Bristol	Combining measurements of deformation and degassing to understand magmatic systems.
Milan Lazecky **Yasser Magshoudi** **Scott Watson** University of Leeds	Updates on the COMET LiCSAR system
Endra Gunawan Institut Teknologi Bandung, Indonesia	Defining the fault source of the destructive 21 November 2022 Mw 5.6 Cianjur earthquake, Indonesia

Science Talks 5 - Wednesday 28 June 09.00 – 10.00 - Chair: Luke Bateson

Nuraini Rahma Hanifa The National Agency for Research and Innovation of The Republic of Indonesia	Building (Geo)Science - Policy - Action Nexus in strengthening earthquake and tsunami resilience in case of Archipelagic and Diverse Country: Indonesia.
Annie Winson BGS	Modelling multi-hazard risk
Sue Loughlin BGS	Anticipation of volcanic activity and potential impacts
Ekbal Hussain BGS	Preconditioning a disaster: The 2023 Kahramanmaraş earthquakes

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ANNUAL MEETING 2023

Posters

Poster Session 1 - Tuesday 27 June 15.00 – 15.45

1.1	**Daniel Sefton** University of Leeds	The spatio-temporal distribution of shallow interseismic fault creep in the Alpine-Himalayan Belt from an InSAR phase-gradient based time-series approach
1.2	**Brendan Mcormick** Kilbride University of Manchester	Temporal Variability in Gas Emissions at Bagana Volcano Revealed by Aerial, Ground, and Satellite Observations
1.3	**Rebecca Colquhoun** University of Oxford	What influences the early parameters of seismograms and are they useful in understanding earthquake determinism?
1.4	**Pedro Alejandro Espin** University of Leeds	Ecuador velocity field using Sentinel-1 InSAR time series
1.5	**Natalie Forrest** University of Leeds	Thirty years of postseismic deformation characterised with multi-satellite InSAR time-series
1.6	**Simon Orrego Astudillo** University of Bristol	Detecting Moderate-Magnitude Earthquakes Within The South American Plate From InSAR Observations
1.7	**Jess Payne** University of Leeds	Characterising Iran's rapidly subsiding regions using Earth Observation data
1.8	**Tianyuan Zhu** University of Bristol	Long-term volcanic deformation of caldera systems
1.9	**Eilish O'Grady** University of Leeds	Deep learning for Improved Phase Unwrapping of InSAR
1.10	**Ben Esse** University of Manchester	Global Daily Volcanic SO2 emissions
1.11	**Yuan Gao** University of Leeds	The overlap between co- and post-seismic slip of the 2021 Mw 7.4 Maduo earthquake, eastern Tibet illuminated by InSAR
1.12	**Mark Bemelmans** University of Bristol	Using InSAR and Pixel Offset Tracking to monitor flank motion at volcanoes

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ANNUAL MEETING 2023

Posters

Poster Session 2 - Tuesday 27 June 17.15 – 18.15

2.1	**Laura Gregory** University of Leeds	Quantifying Holocene fault slip rates in SW Turkey: results from cosmogenic nuclide analyses on bedrock fault scarps
2.2	**Chia-Hsin (Wendy) Tsai** University of Oxford	Updated earthquake scaling for the intra-continental faults
2.3	**Reza Bordbari** University of Leeds	Measuring Ice-loss Associated Uplift in Antarctica using InSAR
2.4	**Cindy Lim Shin Yee** University of Bristol	Deep learning to detect induced seismicity
2.5	**Popescu Robert Gabriel** University of Bristol	Anomaly detection for the identification of volcanic unrest in satellite imagery
2.6	**Muhammet Nergizci** University of Leeds	Three Dimensional Displacement from Burst Overlap Method
2.7	**Manon Carpenter** University of Leeds	Exploring strain localisation in mid crust crustal shear zones: signatures and consequences for the earthquake cycle
2.8	**Dan Gittins** University of Oxford	Estimating the rupture depth and location of shallow creep events along the San Andreas Fault
2.9	**Russell Azad Khan** University of Bristol	Regional variation in foreshock rates
2.10	**Ben Ireland** University of Bristol	Systematic extraction of volcano deformation source parameters from Sentinel-1 InSAR data
2.11	**Dehua Wang** University of Leeds	Large-scale crustal deformation and strain rate distribution along the central-eastern Altyn Tagh fault (NW Tibet) from Sentinel-1 InSAR and GNSS data
2.12	**Luke Wedmore** University of Bristol	Rapid transition from amagmatic to magmatic rifting in the Edward-George Rift, Uganda
2.13	**Josefa Sepulveda** University of Leeds	Surface deformation at Askja Caldera as a response to the interaction of its magmatic system and the tectonic environment during the period of 2020 to 2022
2.14	**José A. Bayona** University of Bristol	A Decade of Prospective Evaluations of One-Day Seismicity Forecasts for California: First Results