



UK Centre for Observation and Modelling of Earthquakes, Volcanoes and Tectonics

National Capability (NC) Research Report

April 2024 – March 2025

1. Strategic Priorities of the COMET NC Science Programme 2024-2029

The full set of COMET NC programme objectives for 2024-2029 are listed below. **Expected deliverables may change over the course of the programme. Objective leads are listed in bold in the table below.**

Research Area		Objective		COMET Members Responsible
A3. Earth Observation Data and Services	A3.1 Deformation, Topography and Surface Change from satellite geodesy and data	03.1.1	Maintain and Improve the COMET-LiCSAR Sentinel-1 service.	Biggs Wright S1 – Esfahany S7 – Dualeh S8 – Lazecky
		03.1.2	Extend the COMET-LiCSAR system to other satellites.	Hooper Novellino S1 – Esfahany S8 – Lazecky
		03.1.3	Derivation and use of high-resolution topographic data for surface change and hazard assessment.	Elliott Hussain Walker S2 – TBC S4 – Watson S7-Dualeh
	A3.2 Retrievals of volcanic emissions from satellite spectrometers	03.2.1	Retrieval of volcanic gases and particles from IASI, IASI-NG, CrIS and IRS.	Engwell Grainger Mather S3a - Taylor
		03.2.2	Volcanic flux time series.	Burton Engwell S3b - Esse
	A3.3 Geoinformatics and machine learning	03.3.1	Improve the sharing and use of COMET datasets through the development of integrated and interactive COMET data portals that are responsive to end-user needs.	Bateson Ebmeier Elliott S1 – Esfahany S3a – Taylor S3b – Esse S4 – Watson S5 – Gaddes S6 – Fang S7 – Dualeh S8 – Lazecky
		03.3.2	Develop machine learning approaches and tools that can be applied to COMET satellite data sets.	Anantrasirichai Biggs Hooper Hussain Novellino S5 – Gaddes

Research Area		Objective	COMET Members Responsible
A4. Tectonics and Volcanism	A4.1 Tectonics and Seismic Hazard	O4.1.1	Develop and deploy a geodetically-based earthquake hazard model. Elliott Ou Wright Walker S6 – Fang S1 – Esfahany S8 – Lazecky
		O4.1.2	Establish the processes that control fault rheology and dynamics, with particular emphasis on the distribution and characteristics of earthquakes and fault creep. Copley Gregory Hawthorne Rhodes Segou Walker Werner Wimpenny S2 – TBC
		O4.1.3	The rheology and dynamics of the ductile crust and upper mantle, and the large-scale migration of tectonic strain. Copley Craig Hussain Wimpenny Wright S6 – Fang
	A4.2 Magmatism and Volcanic Hazard	O4.2.1	Analyse long-term (decadal) patterns of volcanic activity globally. Biggs Duncan Ebmeier Engwell Loughlin Pyle Winson S7 – Dualeh S5 – Gaddes
		O4.2.2	Integrate multiparameter datasets into physically-realistic models of volcanic and magmatic systems. Biggs Burton Ebmeier Edmonds Engwell Hooper Mather Neuberg Pyle M. Watson S7 – Dualeh S3b – Esse
		O4.2.3	Assess the effects of volcanic emissions. Edmonds Engwell Grainger S3a – Taylor S3b – Esse
		O4.2.4	Develop and test the models needed for interpreting satellite data during volcanic crises S3b – Esse S4 – Watson S5 – Gaddes S8 – Lazecky

2. COMET National Capability Staff Overview

Table 1: COMET NC Science Staff, April 2024-March 2025

COMET Position	Staff Member	Institution	Area of focus	Notes
S1	Yasser Maghsoudi/Sami Esfahany	Leeds	InSAR and facility development	YM left in September 2024 (now a COMET Associate). Position vacant for 8 months. SE due to start in May 2025
S2	Neill Marshall/TBC	Oxford	High Resolution Imagery and Topography/Brittle tectonic deformation	Position vacant from January 2025
S3a	Ben Esse	Manchester	Volcanic Gas and Ash	
S3b	Isabelle Taylor	Oxford	Volcanic Gas and Ash	
S4	Scott Watson/TBC	Leeds	Geoinformatics	Position vacant since September 2024 – recruitment currently frozen due to budget uncertainties. Associated objectives delayed.
S5	Matt Gaddes	Leeds	Machine Learning	
S6	Jin Fang	Leeds	Ductile Tectonic Deformation	Started the role in February 2025. Position was vacant for 11 months
S7	Edna Dualeh	Bristol	Magmatic Deformation and Modelling	
S8	Milan Lazecky	Leeds	Scientific Programming	

Table 2: Work Distribution of COMET NC Science Staff, April 2024-March 2025

COMET Position	Area of focus	COMET National Capability	Co-funded projects	Total months
S1	InSAR and facility development	1.5	3.5	5
S2	High Resolution Imagery and Topography/Brittle tectonic deformation	3	7	10
S3a	Volcanic Gas and Ash	0	12	12
S3b	Volcanic Gas and Ash	6	6	12
S4	Geoinformatics	6	0	6
S5	Machine Learning	7.2	0	7.2
S6	Ductile Tectonic Deformation	2	0	2
S7	Magmatic Deformation and Modelling	0	12	12
S8	Scientific Programming	8.75	3.25	12
Total Staff Time (FTE)		34.45	43.75	78.2

3. Overview of Staff Progress

Staff highlights during reporting year:

Staff S1 (Yasser Maghsoudi/Sami Samei-Esfahany, O3.1.1, O3.1.2)

- Managed InSAR system.
- Carried out processing for large portion of the AHB paper and facilitated the team to complete the processing
- Continued to work on InSAR phase bias funded by ESA.

Staff S2 (Neill Marshall, O3.1.3, O4.1.2)

- Co-ordination of COMET-GEM partnership meetings.
- Fieldwork planning, data collection and follow-up (Azerbaijan May 2024).
- Fieldwork planning, data collection and follow-up (Kyrgyzstan August 2024).
- Contribution to EPSRC IAA project on active fault mapping and hazard assessment along the South Caucasus infrastructure corridor.

Staff S3.a (Isabelle Taylor: O3.1.3, O4.1.2)

- Began working on the Oxford Hyperspectral Atmospheric Retrieval Package (Ox-HARP) – a new volcanic cloud retrieval scheme which will provide quantitative information on multiple species (e.g. ash, SO₂, H₂SO₄, H₂O).
- Explored a variety of methods for estimating the neutral buoyancy and overshooting top heights of volcanic clouds using data from the Advanced Baseline Imager.
- Experimented with a methods for estimating the average ascent rate and ascent rate profiles of eruption columns produced during the April 2021 La Soufriere, St Vincent, eruption.
- Generated twice daily global SO₂ images (2007-2022) which are now displayed on the COMET data portal (https://comet.nerc.ac.uk/iasi/COMET_IASI_portal.html).

Staff 3.b (Ben Esse: O3.2.2, O3.3.1, O4.2.2, O4.2.3, O4.2.4)

- Published two studies on recent eruptions of interest (Tajogaite, La Palma, in 2021 and Mauna Loa, Hawai'i, in 2022), using the SO₂ emissions to investigate the magmatic processes driving the activity
- Expanded the existing PlumeTraj code to also be able to analyse SO₂ imagery from IASI (using the Oxford SO₂ product), OMI and EPIC
- Integrated an automated source-allocation algorithm into the PlumeTraj workflow to be able to handle multiple emissions sources (e.g. from active volcanic arcs)
- Had a project accepted by EUMETSAT/ESA, in collaboration with The Royal Belgian Institute for Space Aeronomy (BIRA-IASB) and L'Osservatorio Etneo dell'Istituto Nazionale di Geofisica e Vulcanologia (INGV), to provide validation of the SO₂ products for Sentinel-4 and Sentinel-5 satellite missions using SO₂ emissions from Etna
- PlumeTraj results were used in the response to eruptions on the Reykjanes Peninsula (Iceland), as well as for monitoring unrest at Villarrica (Chile)

Staff S4 (Scott Watson/TBC: O3.1.3, O3.3.1)

- Continue the development of the integrated COMET Datasets and Services Portal.
- Work on Richard Walker's EPSRC grant: application of remote sensing to improve mid-scale multi-hazard assessment (earthquake rupture, landsliding, liquefaction).
- Document COMET workflows to enable adoption by other users.
- Expand the geographic coverage and test the scalability of the InSAR time series velocities explorer portal (O3.4.1).

Staff S5 (Matthew Gaddes: O3.3.1, O3.4.2, O4.2.1, O4.2.4)

- Updates to LiCSAlert were completed to allow it to function on the JASMIN computing system for all of the world's subaerial volcanoes. A new module was developed to calculate a single value (which I term the unrest metric) for each volcano.
- Collaborated with members of the DEEPVOLC team to create, improve, and quality check time series, and to test these with LiCSAlert.
- Collaborated with the University of Leeds Centre for Environmental Modelling And Computation (CEMAC) to update how developments and improvements are displayed on the COMET volcano portal.

Staff S6 (Jin Fang: O3.3.1, O4.1.1, O4.1.3)

- Completed PhD at the University of Leeds.
- Co-supervised two undergraduate dissertation projects at Leeds.
- Contributed to the generation of velocity and strain rate fields for the Alpine-Himalayan Belt, as well as manuscript preparation and submission.
- Assisted with revisions to the Tibet paper.
- Co-convened an InSAR session at the EGU 2025 conference.

Staff S7 (Edna Dualeh: O3.3.1, O4.2.1, 4.2.2)

- Investigated and developed methods to extract lava flow from SAR backscatter imagery, using individual images, pair of images, or multiple images.
- Examined the application of filters and corrections to improve interpretation of SAR backscatter imagery.
- Demonstrated the use of Independent Component Analysis for isolating the magmatic deformation from spatially different hydrothermal signals.
- Contributed to the Fentale Volcano Event Response, by monitoring surface changes at Fentale and Dofen volcanoes for volcanic processes (e.g., lava flows, fumarole activity etc.) using SAR backscatter and optical data.
- Coordinating the analysis of emission of large quantities of carbon gases at Fentale, and how these correlate with other remote sensing datasets.

Staff S8 (Milan Lazecky: O3.1.1, O3.1.2, O3.3.1, O4.1.1, O4.2.4)

- Development of InSAR time series toolbox including long-wave signal corrections.

- Application of time series inversion to measure deformation over volcanoes and portion of the Alpine-Himalayan Belt.
- Introduction and analyzes of new LiCSAR products - burst overlap interferograms sensitive to N-S motion.

4. Staff Plans for Next Year

Staff S1 (Sami Samei-Esfahany, O3.1.3, O11.5.7)

- Current postholder started mid-May 2025. Future plans will be determined over the coming weeks.

Staff S2 (TBC: O3.1.3, O4.1.2)

- Position currently vacant. Recruitment underway.
- Future science objectives associated with the “brittle deformation” role are being discussed by all relevant COMET members at the COMET Annual Meeting 2025.

Staff S3.a (Isabelle Taylor: O3.1.3, O4.1.2)

- Write paper on the 2021 La Soufriere eruption presenting a variety of ash cloud heights, along with ascent rate information. Additionally, it will present new and novel methodologies for estimating these.
- Continue the development of Ox-HARP and demonstrate its ability to retrieve information about volcanic clouds.

Staff 3.b (Ben Esse: O3.2.2, O3.3.1, O4.2.2, O4.2.3, O4.2.4)

- Continue analysis of SO₂ emissions from recent eruptions of interest, including from the Reykjanes Peninsula, Iceland (2021 - present) and Kīlauea, Hawai‘i (2025 fountains).
- Transfer running of PlumeTraj to JASMIN to allow for larger scale automated near real-time analysis and begin building the COMET Degassing Web Portal (an add-on to the volcano portal).
- Take part in a workshop on using the UK Met Office's NAME atmospheric dispersal model to expand my skillset to forecasting the dispersal of volcanic SO₂ clouds.

Staff S4 (Scott Watson/TBC: O3.1.3, O3.3.1)

- Position currently vacant. Recruitment frozen due to budget uncertainties. Discussions are being held about the reallocation of responsibilities for this post during this time and some COMET objectives have been delayed or are on hold.

Staff S5 (Matthew Gaddes: O3.3.1, O3.4.2, O4.2.1, O4.2.4)

- Publish ICA as an atmospheric correction paper.
- Quality check all LiCSAlert results for A1 volcanoes, and write into a publication.

- Investigate 2D ICA further by processing a test time series at a volcano with significant flank motion (e.g. Etna).
- Further develop a DL model to determine deformation source parameters from wrapped interferograms.
- Collaborate with COMET staff on improving the COMET Volcano portal, and including new LiCSAlert results.

Staff S6 (Jin Fang: O3.3.1, O4.1.1, O4.1.3)

- O3.3.1: Collaborate with Dr. Chuanhua Zhu to implement a deep learning-based earthquake rapid response system (contingent on the success of the Royal Society International Exchanges proposal).
- O4.1.1: Support group members and visiting researchers (e.g., Ping He, Fengnian Chang, Dehua Wang) in the direct inversion of geodetic strain rates to estimate slip deficit rates.
- O4.1.3: Generate postseismic InSAR time series following the 2001 Kokoxili earthquake and model the resulting strain to investigate the rheology and dynamics of the ductile crust and upper mantle.

Staff S7 (Edna Dualeh: O3.1.1, O4.2.2, O4.2.4)

- O4.2.2: Analysis of the localised activity in Fentale Caldera, using deformation, gas emission, thermal, optical and SAR data to understand and model the unusual carbon emissions released by volcanic activity.
- O3.1.1 & O4.2.4: Develop SAR backscatter tools that can be applied to monitoring volcanic hazards and potentially used operationally during volcanic crisis

Staff S8 (Milan Lazecky: O3.1.1, O3.1.2, O3.3.1, O4.1.1, O4.2.4)

- O3.1.1: improving documentation and tools development, update LiCSAR system towards new settings on JASMIN computing infrastructure.
- O3.1.2: continue tests using other satellites and prioritise requested missions such as Envisat.
- O3.3.1: update LiCSAR data portal and tools to reflect transfer of the data to CEDA Archive.
- O4.1.1: improve earthquake responder system and transfer to new computing infrastructure (UoL AIRE).
- O4.2.4: further develop LiCSAR VOLQ system generating improved time series over volcanoes.

5. COMET Advisory Board Recommended Actions and Responses (2024)

Description	Outcome/Notes
Disseminate and promote the COMET Fieldwork Guidelines beyond COMET institutions, including to other countries to improve inclusion of women, international students and underrepresented minorities.	Sam Wimpenny alongside collaborators published an article on the COMET Fieldwork Guidelines in <i>Nature Geoscience</i> : Wimpenny, S., Watson, S., Brown, H., Zebracki, M. (May 2024) Progressing Towards Safe, Inclusive and Equitable Field Research , <i>Nature Geoscience</i> , 10.1038/s41561-024-01462-w The University of Leeds School of Earth and Environment have incorporated the guidelines into their fieldwork process. The team have also disseminated the guidelines for use at other UK universities, including Northumbria University, with a slide on the guidelines being presented by an external academic at a Royal Society funded event. The COMET Directorate Team will work with Sam Wimpenny to develop a strategic future plan for further promotion of the COMET Fieldwork Guidelines and to monitor impact.
Improve integration of Earth Observation data (InSAR, gas monitoring, etc), with different types of data (seismic, fault physics, geophysical imagery, etc).	We have more experts on fault physics in attendance at the COMET Annual Meeting 2025, including Professor Sandra Piazzolo and Professor Rachel Abercrombie. Over the last year COMET have been working on improving the integration of EO data with different types of data, for example the response to the Fentale activity has involved integration of InSAR, GPS, seismology, gas, optical imagery, and modelling. We will continue to do this.
Establish better connections and stronger interactions with the scientific community working on dynamics modelling of the earth's interior, accounting for magnetic and gravity measurements from space.	Members within COMET use gravity measurements for tectonic research (for example, Alex Copley), we will consider expanding our science programme to include other measurements.
Develop a project proposal (potentially funded by public operators, such as ESA, Horizon, MET, etc) for a community intercomparison between deformation products produced by different groups (EGM, COMET (GB), DLR (Germany), Flatsim (France), that would allow improved processing for all.	Our focus this year has been on producing LiCSAR results over very large regions. Now that this is complete, now would be a good time to compare our results with other groups in a more systematic way. We have had preliminary discussions with the Statewide California Earthquake Center about the SCEC Community Geodetic Model and will expand these discussions with other groups over the next year to start developing a proposal.

<p>Ensure adequate space for posters and consider reverting back to short talks at the posters themselves (rather than PICO-style talks) if there is space.</p>	<p>We have reverted to short talks at posters for the COMET Annual Meeting 2025 and booked a separate, much larger poster hall.</p>
<p>Keep to smaller breakout groups (<8 people) and repeat guidelines for breakout sessions at every conference: make sure everyone speaks, avoid being judgmental, and have a balanced number of men and women as notetakers and facilitators.</p>	<p>The Advisory Board's advice has been taken into account during the planning for the 2025 COMET Annual Meeting. We have provided all group leads with guidelines for facilitating and engaging all group members. We have split the Thematic Science Discussion into groups of 11 to keep groups to ~8 people. We have also chosen equal numbers of male and female group leads.</p>
<p>Ensure that reusable refreshment cups are available, avoid disposable cups where possible.</p>	<p>Reusable glass coffee cups will be provided at the meeting this year and we have requested that all attendees bring a refillable water bottle to reduce use of disposable cups.</p>

6. Membership

Membership list from 1st April 2024-31st March 2025.

COMET Directorate

The COMET Directorate is responsible for strategic oversight and operational delivery of COMET's overarching vision, mission and science programme.

- **Professor Juliet Biggs (Bristol) - COMET Co-Director – Change from Deputy Director to Co-Director in April 2024**
- Professor Tim Wright (Leeds) - COMET Co-Director
- Charlotte Royle (Leeds) - COMET Manager
- Professor Alex Copley (Cambridge) - Deputy Director (Earthquakes and Tectonics)
- **Dr Susanna Ebmeier – Deputy Director (Volcanoes) – Change from Scientist to Deputy Director in April 2024**
- Professor Don Grainger (Oxford) - Deputy Director (Earth Observation)
- Luke Bateson (BGS) - BGS Representative
- Dr Susan Loughlin (BGS) – BGS Representative
- **Rhys Charles (Bristol) - COMET Senior Engagement and Impact Officer – Started Sept 2024**
- Lucy Sharpson (Leeds) - COMET Research and Events Officer
- **Lucy Woods – COMET Communications Officer – Started Nov 2024**

COMET Scientists

As well as contributing to our objectives and partnerships through co-funded projects, COMET scientists play a key role in internal review and forward planning for the COMET science programme.

All COMET Scientists have demonstrated active engagement with the COMET science programme over a prolonged time period, are faculty staff members in UK universities, and are experts in core COMET competencies.

COMET Scientists oversee COMET contributions to specific projects and/or are responsible for managing an area of research within our overarching research themes. COMET Scientists also contribute to annual progress reports on priorities and activities in collaboration with COMET staff.

- Dr Pui Anantrasirichai (Bristol)
- Dr Brian Baptie (BGS)
- Professor Mike Burton (Manchester)
- Dr Timothy Craig (Leeds)
- Dr Melanie Jane Duncan (BGS)
- Professor Marie Edmonds (Cambridge)
- Dr John Elliott (Leeds)
- Dr Samantha Engwell (BGS)
- Dr Laura Gregory (Leeds)
- Dr Jessica Hawthorne (Oxford)

- Professor Andy Hooper (Leeds)
- Dr Ekbal Hussain (BGS)
- **Dr Yasser Maghsoudi (Exeter) – Changed from Science Staff to Scientist
Sept 24**
- Professor Tamsin Mather (Oxford)
- **Dr Brendan McCormick Kilbride (Manchester) – Changed from Associate to Scientist
Sept 24**
- Dr Ilaria Mosca (BGS)
- Professor Jurgen (Locko) Neuberg (Leeds)
- Dr Alessandro Novellino (BGS)
- **Dr Qi Ou (Edinburgh) – Changed from Science Staff to Scientist
April 24**
- Professor David Pyle (Oxford)
- **Professor Ed Rhodes (Sheffield) – Changed from Associate to Scientist April
2024**
- Dr Margarita Segou (BGS)
- Professor Richard Walker (Oxford)
- Professor Matthew Watson (Bristol)
- Dr Max Werner (Bristol)
- Dr Sam Wimpenny (Bristol)
- Dr Annie Winson (BGS)

COMET Emeritus

- Professor Philip England (Oxford)
- Professor Gregory Houseman (Leeds)
- Professor James Jackson (Cambridge)
- Dr David Kerridge (BGS)
- Professor Barry Parsons (Oxford)
- Professor Geoff Wadge (Reading)

COMET Science Staff

COMET Science Staff are partially-funded by COMET to work on the COMET National Capability science programme.

- Dr Edna Dualeh (Bristol)
- Dr Ben Esse (Manchester)
- Dr Matthew Gaddes (Leeds)
- **Dr Neill Marshall (Oxford) – Left January 2025**
- Dr Milan Lazecky (Leeds)
- **Dr Jin Fang (Leeds) – Started Feb 2025**
- Dr Isabelle Taylor (Oxford)

COMET Postdoctoral Researchers

COMET Postdoctoral Researchers are usually funded by projects or programmes that are led by COMET Scientists and/or associated with the COMET National Capability science programme. They usually work closely with or are supervised by COMET Scientists or Associates.

- Dr Rami Alshembari (Exeter)
- Dr Jose Bayona (Bristol)
- **Dr Matias Clunes (Portsmouth) – Started Oct 24**
- **Dr Tim Davis (Bristol) – Started Sept 24**
- **Dr Joaquin Julve (Cardiff) – Started Nov 24**
- Dr Sacha Lapins (Bristol)
- Dr Camila Novoa Lizama (Leeds)
- Dr Lorenzo Mantiloni (Exeter)
- **Dr Alexandra Morand (Bristol) – Started April 24**
- **Dr Gopal Phartiyal (Leeds) – Started April 24**
- **Dr Shailza Sharma (Leeds) – Started April 24**
- **Dr Zakeria Shnizai (Oxford) – Started Oct 24**
- **Dr Zachary Sudholz (Cambridge) – Started 2024**
- **Dr Giovanni Toffol (Cardiff) – Started Nov 24**
- **Dr Alice Turner (Cambridge) – Started Jan 25**
- **Dr Brandon VanderBeek (Leeds) – Started Feb 25**
- Dr Gregor Weber (University of Bristol)
- **Dr Siyuan Zhao (Leeds) – Started Dec 24**
- **Dr Weiyu Zheng (Bristol) – Started Sept 24**

COMET Associates

COMET Associate Scientists are key collaborators who are engaged with our science programme; this includes postdoctoral researchers with independent research fellowships who are based in COMET research teams. Associates are invited to annual science meetings (and other meetings as appropriate), included in internal communications, and encouraged to collaborate and engage with other COMET members for mutual benefit.

- Dr Philip Benson (Portsmouth)
- Dr Lidong Bie (UEA)
- Dr Sarah Boulton (Plymouth)
- **Sophie Butcher (BGS) – Joined July 24**
- Professor Peter Clarke (Newcastle)
- Dr James Dalziel (WTW Research Network)
- Professor Amy Donovan (Cambridge)
- **Nick Everard (UKCEH) – Joined March 25**
- Professor Ake Fagereng (Cardiff)
- Dr David Ferguson (Leeds)
- Dr Matt Fox (UCL)
- Dr Adriano Gualandi (Cambridge)

- Dr James Hickey (Exeter)
- Dr Anna Hicks (BGS)
- **Dr Rachel Holley (Viridien) – Joined Feb 25**
- Holly Hourston (BGS)
- Dr Evgenia Ilyinskaya (Leeds)
- Professor Mike Kendall (Oxford)
- Professor Zhenhong Li (Newcastle)
- Dr Emma McAllister (BGS)
- Erin Mills (BGS)
- Dr Craig Magee (Leeds)
- Dr Zoe Mildon (Plymouth)
- Dr Andy Nowacki (Leeds)
- **Professor Clive Oppenheimer (Cambridge) – Joined Oct 24**
- Dr Tom Pering (Sheffield)
- **Professor Sandra Piazzolo (Leeds) – Joined Nov 24**
- Dr Margherita Polacci (Manchester)
- Dr Chris Rollins (GNS Science/Leeds)
- Dr Dylan Rood (Imperial)
- Dr Peter Rowley (Bristol)
- Dr Susanne Sargeant (BGS)
- Dr Anja Schmidt (Cambridge/ DLR & LMU Munich)
- Dr Victoria Smith (BGS)
- Dr Maximillian Van Wyk de Vries (Cambridge)
- Dr Charlotte Vye-Brown (BGS)
- **Dr C. Scott Watson (Leeds) – Changed from Science Staff to Associate in Sept 2024**
- Dr Tom Wilkes (Sheffield)
- Dr Gang Zheng (Leeds)

COMET Students

All COMET PhD Researchers receive supervision from COMET members and are working on projects that are closely aligned with the COMET science programme or associated projects. While a few studentships are funded directly by COMET, most of the students within the COMET community are externally funded. COMET supports an annual student meeting to encourage collaboration and a sense of collegiality across our PhD Researcher community, while also providing a supportive atmosphere for presenting research findings.

Lilian Akudo Akanazu	(Nottingham)– Started in Jan-25
I Made Kris Adi Astra	(Oxford)
Josefa Sepulveda Araya	(Leeds)
Simon Orrego Astudillo	(Bristol)
Pedro Espin Bedon	(Leeds)
Mark Bemelmans	(Bristol)
Rachel Bilsland	(Leeds)
Alice Blackwell	(Leeds)
Reza Bordbari	(Leeds)
Jack Campbell	(Cambridge)

Manon Carpenter	(Leeds)
Jennifer Castelino	(Leeds)
Matt Cleave	(Plymouth) – Started in Oct-24
Rebecca Colquhoun	(Oxford)
John Condon	(Leeds)
Jacob Connolly	(Leeds)
Eliza Dennis	(Cardiff) – Started in Oct-24
Jasmine Dibben	(Exeter)
Manuel-Lukas Diercks	(Plymouth)
Eliot Eaton	(Leeds)
Rebecca England	(Sheffield)
Jin Fang	(Leeds)
Natalie Forrest	(Leeds)
David Fountain	(Nottingham/BGS)
Yuan Gao	(Leeds)
Emma Greenough	(Oxford ES) – Started in Oct-24
Alexander Harris	(Bristol) – Started in Oct-24
Syauqi Hidayatillah	(Leeds)
Connor Heeney - MSc	(Edinburgh) – Started in Oct-24
Melina Hohn	(Manchester)
Alice Hopkins	(Leeds)
Yangfan Huang	(Oxford)
Ben Ireland	(Bristol)
Benedict Johnson	(Oxford)
Benji Kettleborough	(Leeds) – Started in Oct-24
Russell Khan	(Bristol)
Rosie Lewis	(Leeds)
Fei Liu	(Leeds)
Fathia Lutfiananda	(Edinburgh/BGS)
Elisha Maglalang	(Cardiff) – Started in Oct-24
Ahmed Mahmoud	(Nottingham)
Grace Manley	(Oxford)
Sophie Mann	(Nottingham/BGS)
Dann Manns	(Exeter)
Neill Marshall	(Oxford)
Emily Mason	(Cambridge)
Jack McGrath	(Leeds)
Adam Morley	(Oxford)
Matthew Morris	(Cambridge)
Olga Nardini	(BGS)
Muhammet Nergizci	(Leeds)
Elish O’Grady	(Leeds)
Alice Paine	(Oxford)
Jessica Payne	(Leeds)
Robert Popescu	(Bristol)
Maddie Reader	(Bristol)
Eoin Reddin	(Leeds)
Alex Riddell	(Manchester)
Michelle Rygus	(Pavia, BGS)

Daniel Sefton	(Leeds)
Jack Sidgwick	(Leeds) – Started in Oct-24
Rebecca Tanner	(Exeter)
Chia-Hsin (Wendy) Tsai	(Oxford)
Megan Udy	(Leeds)
Stijn Vleugels	(Leeds) – Started in Oct-24
Donny Wahyudi	(Edinburgh/BGS)
Laura Wainman	(Leeds)
Dehua Wang	(Leeds)
Andrew Watson	(Leeds)
Nemi Welding	(Hull)
Roberta Wilkinson	(Oxford)
Kevin Wong	(Leeds)
Mia Wroe	(Cambridge)
Ruiyi Yang (MSc)	(Leeds) – Started in Oct-24
Cindy Lim Shin Yee	(Bristol)
Eva Zand	(Leeds)
Tianyuan Zhu	(Bristol)
Gabby Zmajkovic - MSc	(Bristol) – Started in Oct-24

7. COMET Publications April 2024-March 2025

Abdrakhmatov, K., Arrowsmith, R., Elliott, J., Grutzner, C., Mukambayev, A., Rizza, M., Shnizai, Z., Walker, R., Weldon, R., Wilkinson, R. (September 2024) **Urgent need for greater earthquake resilience in continental Asia**, *Nature Geoscience*, 10.1038/s41561-024-01531-0

Asensio-Ramos, M., Pardo Cofrades, A., Burton, M., La Spina, A., Allard, P., Barrancos, J., Hayer, C., Esse, B., D'Auria, L., Hernández, P.A., Padrón, E., Melián, G.V., Pérez, N.M. (January 2025) **Insights into magma dynamics from daily OP-FTIR gas compositions throughout the 2021 Tajogaite eruption, La Palma, Canary Islands**, *Chemical Geology*, 10.1016/j.chemgeo.2024.122605

Ayele, A., Lockett, R., Baptie, B., Whaler, K. (May 2024) **The 2015 earthquake swarm in the Fentale volcanic complex (FVC): A geohazard risk for Ethiopia's commercial route to the Djibouti port**, *Journal of African Earth Sciences*, 10.1016/j.jafrearsci.2024.105236

Bateman, M.D., Davies, E., Evans, D.J.A., Roberts, D.H., Connell, E.R., Rhodes, E.J. (February 2025) **Developing a new approach to the luminescence dating of sediments from glacial contexts**, *Quaternary Geochronology*, 10.1016/j.quageo.2025.101659

Beckett, F., Barsotti, S., Burton, R., Dioguardi, F., Engwell, S., Hort, M., Kristiansen, N., Loughlin, S., Muscat, A., Osborne, M., Saint, C., Stevenson, J., Valters, D., Witham, C. (June 2024) **Conducting volcanic ash cloud exercises: practising forecast evaluation procedures and the pull-through of scientific advice to the London VAAC**, *Bulletin of Volcanology*, 10.1007/s00445-024-01717-9

Biggs, J., Rafferty, T., Macha, J., Dualeh, E.W., Weber, G., Burgisser, A., Carroll, F., Hart, L., Rust, A.C., Gilbertson, M., Morand, A. (June 2024) **Fracturing around magma reservoirs can explain variations in surface uplift rates even at constant volumetric flux**, *Journal of Volcanology and Geothermal Research*, 10.1016/j.jvolgeores.2024.108129

Black, B.A., Karlstrom, L., Mills, B.J.W. (October 2024) **Cryptic degassing and protracted greenhouse climates after flood basalt events**, *Nat. Geosci.*, 10.1038/s41561-024-01574-3

Blackwell, A., Craig, T., Rost, S. (August 2024) **Automatic relocation of intermediate-depth earthquakes using adaptive teleseismic arrays**, *Geophysical Journal International*, 10.1093/gji/ggae289

Bonechi, B. (2024) **Direct observation of degassing during decompression of basaltic magma**, *Science Advances*, 10.1126/sciadv.ado2585

Bordbari, R., Hooper, A.J. (March 2025) **Improved Deorientation Processing for Polarimetric SAR Data Using a Phenomenological Approach**, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, 10.1109/JSTARS.2025.3551246

Bos, R., Zheng, W., Lindström, S. (April 2024) **Climate-forced Hg-remobilization associated with fern mutagenesis in the aftermath of the end-Triassic extinction**, *Nat Commun*, 10.1038/s41467-024-47922-0

Bryce, E., Castro-Camilo, D., Dashwood, C., Tanyas, H., Ciurean, R., Novellino, A., Lombardo, L. (September 2024) **An updated landslide susceptibility model and a log-Gaussian Cox process extension for Scotland**, *Technical Note*, 10.1007/s10346-024-02368-9

Colby, D.J., Pyle, D.M., Fontijn, K., Mather, T.A., Nomade, S., Melaku, A.A., Mengesha, M.A., Yirgu, G. (August 2024) **Magma storage conditions beneath a peralkaline caldera in the Main Ethiopian Rift**, *Journal of Volcanology and Geothermal Research*, 10.1016/j.jvolgeores.2024.108165

- Cotterill, A.S., Nicholson, E.J., Hayer, C.S.L., Kilburn, C.R.J. (October 2024) **Magma recharge at Manam volcano, Papua New Guinea, identified through thermal and SO₂ satellite remote sensing of open-vent emissions**, *Bull Volcanol*, 10.1007/s00445-024-01772-2
- Craig, T., Hull, A. (May 2024) **Extensional failure at the tip of a weak slab under slab pull - the 2023 Mw 6.4 Quiché, Guatemala, earthquake**, *Seismica*, 10.26443/seismica.v3i1.1190
- Dal Corso, J., Newton, R.J., Zerkle, A.L., Chu, D., Song, H., Song, H., Tian, L., Tong, J., Di Rocco, T., Claire, M.W., Mather, T.A., He, T., Gallagher, T., Shu, W., Wu, Y., Bottrell, S.H., Metcalfe, I., Cope, H.A., Novak, M., Jamieson, R.A., Wignall, P.B. (September 2024) **Repeated pulses of volcanism drove the end-Permian terrestrial crisis in northwest China**, *Nature Communications*, 10.1038/s41467-024-51671-5
- Delbrel, J., Burton, M., Engwell, S., Esse, B., Hayer, C. (March 2025) **An investigation of changes to commercial aircraft flight paths during volcanic eruptions**, *Journal of Applied Volcanology*, 10.1186/s13617-025-00150-7
- Delbrel, J., Burton, M., Esse, B., Hayer, C., Varnam, M. (June 2024) **TROPOMI/PlumeTraj SO₂ fluxes consistent with partially degassed magma supplying the 2018 Kīlauea eruption**, *Journal of Volcanology and Geothermal Research*, 10.1016/j.jvolgeores.2024.108066
- Diercks, M., Hussain, E., Mildon, Z.K., Boulton, S.J., Lazecký, M. (November 2024) **Active deformation across the Western Anatolian Extensional Province (Türkiye) from Sentinel-1 InSAR**, *Tectonics*, 10.1029/2023TC008086
- Elliott, R., McCaffrey, K., Gregory, L., Wedmore, L. (February 2025) **Fault scarps as evidence of historical co-seismic slip - a study of postseismic scarp degradation following the 2016 Norcia earthquake**, *Geomorphology*, 10.1016/j.geomorph.2025.109662
- Engwell, S., Mastin, L.G., Bonadonna, C., Barsotti, S., Deligne, N.I., Oladottir, B.A. (June 2024) **Characterising, quantifying, and accessing eruption source parameters of explosive volcanic eruptions for operational simulation of tephra dispersion: a current view and future perspectives**, *Bulletin of Volcanology*, 10.1007/s00445-024-01706-y
- Espín Bedón, P.A., Ebmeier, S.K., Elliott, J.R., Wright, T.J., Mothes, P., Cayol, V., Maghsoudi, Y., Lazecký, M., Andrade, D. (July 2024) **Co-eruptive, endogenous edifice growth, uplift during 4 years of eruption at Sangay Volcano, Ecuador**, *Journal of Volcanology and Geothermal Research*, 10.1016/j.jvolgeores.2024.108147
- Fang, J., Houseman, G.A., Wright, T.J., Evans, L.A., Craig, T.J., Elliott, J.R., Hooper, A. (June 2024) **The Dynamics of the India-Eurasia Collision: Faulted Viscous Continuum Models Constrained by High-Resolution Sentinel-1 InSAR and GNSS Velocities**, *JGR Solid Earth*, 10.1029/2023JB028571
- Fang, J., Wright, T.J., Johnson, K.M., Ou, Q., Styron, R., Craig, T.J., Elliott, J.R., Hooper, A., Zheng, G. (October 2024) **Strain Partitioning in the Southeastern Tibetan Plateau From Kinematic Modeling of High-Resolution Sentinel-1 InSAR and GNSS**, *Geophysical Research Letters*, 10.1029/2024GL111199
- Fibbi, G., Novellino, A., Bateson, L., Fanti, R., Del Soldato, M. (September 2024) **Multidisciplinary assessment of seasonal ground displacements at the Hatfield Moors gas storage site in a peat bog landscape**, *Scientific Reports volume*, 10.1038/s41598-024-73548-9
- Frieling, J., Fendley, I.M., Nawaz, M.A., Mather, T.A. (April 2024) **Assessment of Hg speciation changes in the sedimentary rock record from thermal desorption characteristics**, *Geochemistry, Geophysics, Geosystems*, 10.1029/2024GC011502
- Frieling, J., Svensen, H.H., Mather, T.A. (November 2024) **Mercury efficiently volatilized but not completely removed from sediments around igneous intrusions**, *Geology*, 10.1130/G52622.1

- Gaddes, M., Hooper, A., Albino, F. (June 2024) **Simultaneous Classification and Location of Volcanic Deformation in SAR Interferograms Using a Convolutional Neural Network**, *Earth and Space Science*, 10.1029/2024EA003679
- Galetto, F., Dualeh, E., Delgado, F., Pritchard, M., Poland, M., Ebmeier, S.K., Shreve, T., Biggs, J., Hamling, I., Wauthier, C., Gonzalez-Santana, J., Froger, J-L. (June 2024) **The utility of TerraSAR-X, TanDEM-X, and PAZ for studying volcanic activity: Successes, challenges, and future prospects**, *Volcanica*, 10.30909/vol.07.01.273301
- Gantayat, P., Sattar, A., Haritashya, U.K., Watson, C.S., Kargel, J.S. (June 2024) **Bayesian Approach to Estimate Proglacial Lake Volume (BE-GLAV)**, *Earth and Space Science*, 10.1029/2024EA003542
- Gittins, D.B., Hawthorne, J.C. (June 2024) **Scattered M3–4 Slip Bursts Within Creep Events on the San Andreas Fault**, *JGR Solid Earth*, 10.1029/2023JB028187
- Graham, K.M., Bayona, J.A., Khawaja, A.M., Iturrieta, P., Serafini, F., Biondini, E., Rhoades, D.A., Savran, W.H., Maechling, P.J., Gerstenberger, M.C., Silva, F., Werner, M.J. (October 2024) **New Features in the pyCSEP Toolkit for Earthquake Forecast Development and Evaluation**, *Seismological Research Letters*, 10.1785/0220240197
- Hofmann, B., Magee, C., Wright, T.J. (November 2024) **Throw distribution across the Dabbahu–Manda Hararo dike-induced fault array: Implications for rifting and faulting**, *Geology*, 10.1130/G52665.1
- Holmgren, J.M., Werner, M.J., Goda, K., Villani, M., Silva, V., Chindandali, P. (April 2024) **Ranking and developing ground-motion models for Southeastern Africa**, *Earthquake Spectra*, 10.1177/87552930241236765
- Hourston, H., Álvarez, I.G., Bateson, L., Hussain, E., Novellino, A. (July 2024) **Automated InSAR Time-Series Analysis Tool for Geological Interpretations in Near-Real Time**, *IEEE*, 10.1109/IGARSS53475.2024.10641304
- Hutchison, W., Sugden, P., Burke, A., Abbott, P., Ponomareva, V.V., Dirksen, O., Portnyagin, M.V., MacInnes, B., Bourgeois, J., Fitzhugh, B., Verkerk, M. (January 2025) **The 1831 CE mystery eruption identified as Zavaritskii caldera, Simushir Island (Kurils)**, *Proceedings of the National Academy of Sciences*, 10.1073/pnas.2416699122
- Ilyinskaya, E., Snæbjarnarson, V., Carlsen, H.K., Oddsson, B. (September 2024) **Brief communication: Small-scale geohazards cause significant and highly variable impacts on emotions**, *Natural Hazards and Earth System Sciences*, 10.5194/nhess-24-3115-2024
- Indraswari, A.O., Frieling, J., Mather, T.A., Dickson, A.J., Jenkyns, H.C., Idiz, E. (June 2024) **Investigating the Behavior of Sedimentary Mercury (Hg) During Burial-Related Thermal Maturation**, *Geochemistry, Geophysics, Geosystems*, 10.1029/2024GC011555
- Irsyam, M., Widiyantoro, S., Faizal, L., Hanifa, N.R., Natawidjaja, D.H., Triyoso, W., Nugraha, A.D., Meilano, I., Asrurifak, M., Pramono, S., Aldiamar, F., Hendarto, H., Gunawan, E., Rosalia, S., Supendi, P., Daryono, M., Patria, A., Ariwibowo, S., Sapiie, S., Pramono, G.H., Agustan, A., Pratama, C., Rahmadani, S., Shomim, A.F., Herfiani, D., Cummins, P.R., Sengara, W., Pagani, M., Hussain, E., Hendriyawan, H. (July 2024) **Recent development of seismic source and hazard maps of Indonesia for earthquake resistant design, 2025 World Conference on Earthquake Engineering**, <https://proceedings-wcee.org/view.html?id=25222&conference=18WCEE>
- Jenkins, S., Mee, K., Engwell, S., Loughlin, S., Faria, B., Yirgu, G., Bekele, Y., Lewi, E., Vye-Brown, C., Fraser, S., Day, S. (October 2024) **Assessing volcanic hazard and exposure in a data poor context: Case study for Ethiopia, Kenya, and Cabo Verde**, *Progress in Disaster Science*, 10.1016/j.pdisas.2024.100350

- Jenkins, S.F., Mee, K., Engwell, S.L., Loughlin, S.C., Faria, B.V.E., Yirgu, G., Bekele, Y., Lewi, E., Vye-Brown, C., Fraser, S.A., Day, S.J., Lark, R.M., Huyck, C., Crummy, J. (July 2024) **Assessing volcanic hazard and exposure in a data poor context: Case study for Ethiopia, Kenya, and Cabo Verde**, *Progress in Disaster Science*, 10.1016/j.pdisas.2024.100350
- La Spina, A., Burton, M., Houghton, B.F., Sutton, A.J., Esse, B. (October 2024) **Magmatic degassing dynamics at Halema'uma'u Crater, Kīlauea, Hawaii**, *Earth and Planetary Science Letters*, 10.1016/j.epsl.2024.119062
- Lazecký, M., Ou, Q., Shen, L., McGrath, J., Payne, J., Espín, P., Hooper, A., Wright, T. (July 2024) **Strategies for improving and correcting unwrapped interferograms implemented in LiCSBAS**, *Procedia Computer Science*, 10.1016/j.procs.2024.06.435
- Lei, S., Walker, R., Li, Y., Ma, J., Johnson, B., Ou, Q., Tsai, C-H., Chen, C., Feng, X., Xu, L. (March 2025) **Surface ruptures from the 1556 Huaxian earthquake, North China, measured using high-resolution topography: Implications for large magnitude normal-faulting earthquakes in continental interiors**, *Quaternary Science Advances*, 10.1016/j.qsa.2025.100270
- Lim, C.S.Y., Lapins, S., Segou, M., Werner, M.J. (January 2025) **Deep learning phase pickers: how well can existing models detect hydraulic-fracturing induced microseismicity from a borehole array?**, *Geophys J Intern*, <https://doi.org/10.1093/gji/ggae386>
- Lucas, N.A., Weller, O.M., Copley, A., Mottram, C.M., Chapman, G., McMahon, W.J. (November 2024) **The Diverse Habitats of Eclogite Formation: Insights From the Mesoproterozoic Glenelg Inlier, Scotland**, *Journal of Metamorphic Geology*, 10.1111/jmg.12801
- Mann, S., Novellino, A., Hussain, E., Grebby, S., Bateson, L., Capsey, A., Marsh, S. (May 2024) **Coastal Sediment Grain Size Estimates on Gravel Beaches Using Satellite Synthetic Aperture Radar (SAR)**, *Remote Sensing*, 10.3390/rs16101763
- Marsh, J., Edmonds, M., Houghton, B., Buisman, I., Herd, R. (May 2024) **Magma mingling during the 1959 eruption of Kīlauea Iki, Hawai'i**, *Bulletin of Volcanology*, 10.1007/s00445-024-01748-2
- McCormick Kilbride, B.T., Barry, P.H., Fischer, T.P., Holland, G., Hudak, M., Nowicki, S., Ballentine, C., Fox, M.D., Höhn, M., Itikarai, I., Johnson, M.D., Mulina, K., Nicholson, E.J. (October 2024) **Helium, carbon and nitrogen isotope evidence for slab influence on volcanic gas emissions at Rabaul caldera, Papua New Guinea**, *Chemical Geology*, 10.1016/j.chemgeo.2024.122434
- Medici, C., Becattini, F., Dashwood, C., Del Soldato, M., Bianchini, S., Bateson, L., Lee, K., Novellino, A. (November 2024) **On the use of the EGMS data for studying landslides in Great Britain**, *Earth Observation Applications to Landslide Mapping, Monitoring and Modeling*, 10.1016/B978-0-12-823868-4.00005-2
- Mizrahi, L., Dallo, I., van der Elst, N.J., Christophersen, A., Spassiani, I., Werner, M.J., Iturrieta, P., Bayona, J.A., Iervolino, I., Schneider, M., Page, M.T., Zhuang, J., Herrmann, M., Michael, A.J., Falcone, G., Marzocchi, W., Rhoades, D., Gerstenberger, M., Gulia, L., Schorlemmer, D., Becker, J., Han, M., Kuratle, L., Marti, M., Wiemer, S. (September 2024) **Developing, testing, and communicating earthquake forecasts: Current practices and future directions**, *Reviews of Geophysics*, <https://doi.org/10.1029/2023RG000823>
- Morley, A.M., Mather, T.A., Pyle, D.M., Kendall, J-M. (December 2024) **Detecting shallow subsurface anomalies with airborne and spaceborne remote sensing: A review**, *Science of Remote Sensing*, 10.1016/j.srs.2024.100187
- Moualla, L., Rucci, A., Naletto, G., Anantrasirichai, N. (April 2024) **Learning Ground Displacement Signals Directly from InSAR-Wrapped Interferograms**, *Sensors*, 10.3390/s24082637

- Mousavi, Z., Talebian, M., Amiri, M., Walker, R.T., Marshall, N., Walpersdorf, A. (March 2025) **Constancy of Geologic and Geodetic Fault Slip Rates Across the Arabia-Eurasia Collision Revealed Through Two Decades of Observation**, *Tectonics*, 10.1029/2024TC008380
- Nergizci, M., Lazecky, M., Ou, Q., Wright, T., Hooper, A. (July 2024) **Along-Track Displacement of Mw 7.8 and 7.6 Kahramanmaras Earthquakes from Sentinel-1 Offset Tracking and Burst Overlap Interferometry**, *Procedia Computer Science*, 10.1016/j.procs.2024.06.401
- Novoa Lizama, C., Remy, D., Baez, J.C., Oyarzun, A., Bonvalot, S., Hooper, A. (December 2024) **Modeling magma recharge dynamics during the 2016 Nevados de Chillan eruption: An interacting two-chamber system evidenced by petrology and geodesy**, *Journal of Volcanology and Geothermal Research*, 10.1016/j.jvolgeores.2024.108253
- Pappas, O., Biggs, J., Prats-Iraola, P., Pulella, A., Stinton, A., Achim, A. (November 2024) **Measuring topographic change after volcanic eruptions using multistatic SAR satellites: Simulations in preparation for ESA's Harmony mission**, *Remote Sensing of Environment*, 10.1016/j.rse.2024.114528
- Parks, M., Drouin, V., Sigmundsson, F., Hjartardóttir, A.R., Geirsson, H., Pedersen, G.B.M., Belart, J.M.C., Barsotti, S., Lanzi, C., Vogfjörð, K., Hooper, A., Ófeigsson, B., Hreinsdóttir, S., Gestsson, E.B., Prastarson, R.H., Einarsson, P., Tolpekin, V., Rotheram-Clarke, D., Gunnarsson, S.R., Óskarsson, B.V., Pinel, V. (March 2025) **2023–2024 inflation-deflation cycles at Svartsengi and repeated dike injections and eruptions at the Sundhnúkur crater row, Reykjanes Peninsula, Iceland**, *Earth and Planetary Science Letters*, 10.1016/j.epsl.2025.119324
- Peach, C., Nippress, S.E.J., Green, D.N., Mayeda, K., Wookey, J.M., Werner, M.J. (May 2024) **A UK Mw catalogue derived from coda envelopes**, *Geophysical Journal International*, 10.1093/gji/ggae180
- Prata, F., Prata, A.T., Tanner, R., Grainger, R.G., Borgas, M., Aubry, T.J. (January 2025) **The radial spreading of volcanic umbrella clouds deduced from satellite measurements**, *Volcanica*, 10.30909/vol.08.01.0129
- Reddin, E., Ebmeier, S., Bagnardi, M., Bell, A.F., Espín Bedón, P. (April 2024) **Craters of habit: Patterns of deformation in the western Galápagos**, *Volcanica*, 10.30909/vol.07.01.181227
- Ren, Z., Zielke, O., Shyu, J.B.H., Walker, R. (November 2024) **High-resolution geological studies of seismogenic structures**, *Journal of Structural Geology*, 10.1016/j.jsg.2024.105306
- Rhodes, E.J., Spano, T.M.C., Hodge, R.A., Sawakuchi, A.O., Bertassoli, D.J. (September 2024) **Single grain K-feldspar MET-IRSL sediment transport determination: Bleaching patterns and rates**, *Quaternary Geochronology*, 10.1016/j.quageo.2024.101626
- Robbins, D.J.V., Poulsen, C.A., Siems, S.T., Proud, S.R., Prata, A.T., Grainger, R.G., Povey, A.C. (May 2024) **Geostationary aerosol retrievals of extreme biomass burning plumes during the 2019–2020 Australian bushfires**, *Atmos. Meas. Tech.*, 10.5194/amt-17-3279-2024
- Rygas, M., Bianchi, M., Novellino, A., Hussain, E., Taufiq, A., Rusli, S.R., Sarah, D., Meisina, C. (December 2024) **Permanent aquifer storage loss from long-term groundwater withdrawal: A case study of subsidence in Bandung (Indonesia)**, *Journal of Hydrology: Regional Studies*, 10.1016/j.ejrh.2024.102129
- Segou, M. (August 2024) **GJI enters the Open Science era**, *Geophysical Journal International*, doi.org/10.1093/gji/ggae276
- Sepúlveda-Araya, J. (May 2024) **Monitoring volcanoes with microgravity surveys**, *Nature Reviews Earth & Environment*, 10.1038/s43017-024-00563-9

- Šakić Trogrlić, R., Thompson, H.E., Menteşe, E.Y., Hussain, E., Gill, J.C., Taylor, F.E., Mwangi, E., Öner, E., Bukachi, V.G., Malamud, B.D. (September 2024) **Multi-hazard interrelationships and risk scenarios in urban areas: A case of Nairobi and Istanbul**, *Earth's Future*, 10.1029/2023EF004413
- Shen, L., Hooper, A., Elliott, J.R., Wright, T.J. (August 2024) **Variability in interseismic strain accumulation rate and style along the Altyn Tagh Fault**, *Nature Communications*, 10.1038/s41467-024-51116-z
- Sigmundsson, F., Parks, M., Geirsson, H., Albino, F., Schmidt, P., Li, S., Pálsson, F., Ófeigsson, B.G., Drouin, V., Aðalgeirsdóttir, G., Magnússon, E., Hooper, A., Hreinsdóttir, S., Maclennan, J., Sturkell, E., Trasatti, E. (August 2024) **Influence of climate change on magmatic processes: What does geodesy and modeling of geodetic data tell us?**, *GNSS Monitoring of the Terrestrial Environment*, 10.1016/B978-0-323-95507-2.00013-X
- Stockman, S., Lawson, D.J., Werner, M.J. (August 2024) **SB-ETAS: using simulation based inference for scalable, likelihood-free inference for the ETAS model of earthquake occurrences**, *Stat Comput*, 10.1007/s11222-024-10486-6
- Sudholz, Z.J., Copley, A. (January 2025) **Xenolith Constraints on the Mantle Potential Temperature and Thickness of Cratonic Roots Through Time**, *Geophysical Research Letters*, 10.1029/2024GL112851
- Šakić Trogrlić, R., Thompson, H.E., Menteşe, E.Y., Hussain, E., Gill, J.C., Taylor, F.E., Mwangi, E., Öner, E., Bukachi, V.G., Malamud, B.D. (September 2024) **Multi-hazard interrelationships and risk scenarios in urban areas: A case of Nairobi and Istanbul**, *Earth's Future*, 10.1029/2023EF004413
- Taracsák, Z., Hartley, M.E., Burgess, R., Edmonds, M., Longpré, M., Monteleone, B.D., Tartèse, R., Turchyn, A.V. (March 2025) **The origin of sulfur in Canary Island magmas and its implications for Earth's deep sulfur cycle**, *Proceedings of the National Academy of Sciences of the United States of America*, 10.1073/pnas.2416070122
- Thapa, S., Sinclair, H.D., Creed, M.J., Borthwick, A.G.L., Watson, C.S., Muthusamy, M. (October 2024) **Sediment Transport and Flood Risk: Impact of Newly Constructed Embankments on River Morphology and Flood Dynamics in Kathmandu, Nepal**, *Water Resources Research*, 10.1029/2024WR037742
- Tierz, P., Spiller, E.T., Clarke, B.A., Dessalegn, F., Bekele, Y., Lewi, E., Yirgu, G., Wolpert, R.L., Loughlin, S.C., Calder, E.S. (May 2024) **Topographic Controls on Pyroclastic Density Current Hazard at Aluto Volcano (Ethiopia) Identified Using a Novel Zero-Censored Gaussian Process Emulator**, *Journal of Geophysical Research: Solid Earth*, 10.1029/2023JB028645
- Udy, M.L., Ebmeier, S.K., Watt, S.F.L., Hooper, A., Paredes, A. (October 2024) **Satellite measurement of forest disturbance, recovery and deposit distribution following explosive volcanic eruptions**, *Journal of Volcanology and Geothermal Research*, 10.1016/j.jvolgeores.2024.108204
- Wainman, L., Ilyinskaya, E., Pfeffer, M., Mandon, C., Bali, E., Edwards, B.A., Kleine-Marshall, B.I., Gudjonsdottir, S.R., Cotterill, A., Scott, S.W., Wieser, P., Stefánsson, A., Nicholson, E.J., Sepulveda-Araya, J., Hammond, S.J., Kunz, B.E., Jenner, F., Gunnarsson, J.R., Aiuppa, A., Burton, M., Mather, T.A. (December 2024) **Trace Element Emissions Vary With Lava Flow Age and Thermal Evolution During the Fagradalsfjall 2021–2023 Eruptions, Iceland**, *Geochemistry, Geophysics, Geosystems*, 10.1029/2024GC011822
- Walker, R., Lei, S., Li, Y., Ma, J., Johnson, B., Ou, Q., Tsai, C.-H., Chen, C., Feng, X., Xu, L. (March 2025) **Surface ruptures from the 1556 Huaxian earthquake, North China, measured using high-resolution topography: Implications for large magnitude normal-faulting earthquakes in continental interiors**, *Quaternary Science Advances*, 10.1016/j.qsa.2025.100270

- Walker, R., Mousavi, Z., Talebian, M., Amiri, M., Marshall, N., Walpersdorf, A. (March 2025) **Constancy of Geologic and Geodetic Fault Slip Rates Across the Arabia-Eurasia Collision Revealed Through Two Decades of Observation**, *Tectonics*, 10.1029/2024TC008380
- Wallis, B.J., Hogg, A.E., Zhu, Y., Hooper, A. (October 2024) **Change in grounding line location on the Antarctic Peninsula measured using a tidal motion offset correlation method**, *The Cryosphere*, 10.5194/tc-18-4723-2024
- Wang, D., Elliott, J.R., Zheng, G., Wright, T.J., Watson, A.R., McGrath, J.D. (August 2024) **Deciphering interseismic strain accumulation and its termination on the central-eastern Altyn Tagh fault from high-resolution velocity fields**, *Earth and Planetary Science Letters*, 10.1016/j.epsl.2024.118919
- Watson, A.R., Elliott, J.R., Lazecký, M., Maghsoudi, Y., McGrath, J.D., Walters, R.J. (May 2024) **An InSAR-GNSS Velocity Field for Iran**, *Geophysical Research Letters*, 10.1029/2024GL108440
- Watson, C.S., Gyawali, J., Creed, M., Elliott, J.R. (August 2024) **City-scale high-resolution flood models and the role of topographic data: a case study of Kathmandu, Nepal**, *Geocarto International*, 10.1080/10106049.2024.2387073
- Weber, G., Biggs, J., Annen, C. (January 2025) **Distinct patterns of volcano deformation for hot and cold magmatic systems**, *Nature Communications*, 10.1038/s41467-024-55443-z
- Weller, O., Benson, J., Copley, A. (January 2025) **A Cautionary Tale About Not 'Joining the Dots' to Infer Anticlockwise P-T Paths**, *J Metamorph Geol.*, 10.1111/jmg.12805
- Wimpenny, S., Watson, S., Brown, H., Zebracki, M. (May 2024) **Progressing Towards Safe, Inclusive and Equitable Field Research**, *Nature Geoscience*, 10.1038/s41561-024-01462-w
- Zhang, Y., Wimpenny, S., Dal Zilio, L., Shan, X. (April 2024) **Strain partitioning and fault kinematics in the northern Qilian Shan (NE Tibet) determined from Bayesian inference of geodetic data**, *Geophysical Research Letters*, 10.1029/2023GL107324