Alexander J. Baker

Address: Department of Meteorology,
University of Reading,
Whiteknights, Reading,
Berkshire RG6 6ES, UK

e-mail: alexander.baker@reading.ac.uk
alexander.baker@ncas.ac.uk
Tel: +44 (0)118 378 7762
Web: alexanderjbaker.github.io
alexbakey.wordpress.com

Present appointment

National Centre for Atmospheric Science & Department of Meteorology, University of Reading

March 2025 – present — Senior Research Scientist
Project Manager for *Huracán* (NERC–NSF Large Grant)

March 2016 – February 2025 — Research Scientist

Projects

UPSCALE	Km-scale simulations for AI learning	2025–2026
REPRESA	Tropical cyclone risk in southern Africa	2024–2026
Huracán	Hurricane Risk Amplification and Changing North Atlantic Natural Disasters	2023–2027
nextGEMS	Tropical cyclones in storm-resolving global climate models	2022–2025
ACSIS	North Atlantic extratropical cyclone risk	2020–2021
BP–Trinidad	Tropical cyclone risk in the Trinidad oil field region	2018–2020
PRIMAVERA	North Atlantic hydroclimatic extremes and their drivers	2016–2020

Research interests

- Tropical and midlatitude cyclones, and extratropical transition
- North Atlantic climate variability and extremes
- Global high-resolution weather and climate modelling
- Large-scale atmospheric circulation and jet streams
- Hazardous weather impacts and climate risk assessment
- Science communication
- Engagement and impact beyond academia

Career

Institute for Atmospheric and Climate Science, ETH Zürich
February – March 2014
Research visitor: Asian Monsoon rainfall oxygen isotope systematics
August – September 2012
Research visitor: Asian Monsoon atmospheric moisture transport and rainfall

Department of Earth Sciences and St Mary's College, University of Durham
January 2011 – June 2015
Sir Kingsley Dunham Ph.D. Studentship
Thesis: '*Lagrangian modelling of precipitation and speleothem proxy oxygen isotope systematics in the East Asian Summer Monsoon region*'
Supervisor: Prof. James U. L. Baldini

October 2009 – September 2010
M.Sc. Geological Sciences
Thesis: '*Modelling the growth rate and oxygen isotope composition of stalagmite calcite: influence of cave ventilation and isotopic fractionation processes through Earth's hydrosphere*'
Supervisor: Prof. James U. L. Baldini

October 2006 – June 2009
B.Sc. (Hons) Geology. 2i.
Dissertation: '*Report on geological fieldwork at Torver High Common, near Coniston, English Lake District*'
Supervisor: Dr Howard A. Armstrong

Refereed publications

Citations: 1307
***h*-index:** 17

researchgate.net/profile/Alexander-Baker-4
orcid.org/0000-0003-2697-1350

Preprints under review

Kendon, E. J., Artur, L., Engelbrecht, F., Van Niekerk, D., Ayala, C., **Baker, A. J.**, Craig, A., Jaime, C., Meyer, R., Orozco-Meléndez, F., Razakamaharavo, V., Stephens, E., Vanya, C., Vincent, K., Vogeld, C., Dahadm, G., Sederam, R. A., Mahatokym, M., and Michaëlm, G. R. F. Opportunities for increasing resilience to changing severe weather in southern Africa: "Early Action and Enhanced Adaptive Capacity for All." Under review, *Bulletin of the American Meteorological Society*.

Saffin, L., Hodges, K. I., Bourdin, S., Fiorino, M., Methven, J., Vidale, P. L., and **Baker, A. J.** An improved approach to identifying tropical cyclones in model data using the cyclone phase space: warm core, symmetric, and intensifying. Under review, *Monthly Weather Review*.

Published

Vessey, A. F., **Baker, A. J.**, Marcellin-Honore, V., and Michelin, J. Combining hazard, exposure and vulnerability data to predict historical United States hurricane damage. *Natural Hazards and Earth System Sciences* **26**, 2133–2150 (2026).

Baker, A. J., Lockwood, J. F., Athanasiadis, P. J., and Vidale, P. L. Reduced future North Atlantic eddy-driven jet variability in high-resolution, fully coupled global climate models. *Journal of Climate* **39**, 2925–2936 (2026).

Segura, H., Pedruzo-Bagazgoitia, X., Weiss, P., Müller, S. K., Rackow, T., Lee, J., Dolores-Tesillos, E., Benedict, I., Aengenheyster, M., Aguridan, R., Arduini, G., **Baker, A. J.**, Bao, J., Bastin, S., Baulenas, E., Becker, T., Beyer, S., Bockelmann, H., Brüggemann, N., Brunner, L., Cheedela, S. K., Das, S., Denissen, J., Dragaud, I., Dziekan, P., Ekblom, M., Engels, J. F., Esch, M., Forbes, R., Frauen, C., Freischem, L., García-Maroto, D., Geier, P., Gierz, P., González-Cervera, Á., Grayson, K., Griffith, M., Gutjahr, O., Haak, H., Hadade, I., Haslehner, K., ul Hasson, S., Hegewald, J., Kluft, L., Koldunov, A., Koldunov, N., Kölling, T., Koseki, S., Kosukhin, S., Kousal, J., Kuma, P., Kumar, A. U., Li, R., Maury, N., Meindl, M., Milinski, S., Mogensen, K., Niraula, B., Nowak, J., Praturi, D. S., Proske, U., Putrasahan, D., Redler, R., Santuy, D., Sármány, D., Schnur, R., Scholz, P., Sidorenko, D., Spät, D., Sützl, B., Takasuka, D., Tompkins, A., Uribe, A., Valentini, M., Veerman, M., Voigt, A., Warnau, S., Wachsmann, F., Wacławczyk, M., Wedi, N., Wieners, K.-H., Wille, J., Winkler, M., Wu, Y., Ziemen, F., Zimmermann, J., Bender, F. A.-M., Bojovic, D., Bony, S., Bordoni, S., Brehmer, P., Dengler, M., Dutra, E., Faye, S., Fischer, E., van Heerwaarden, C., Hohenegger, C., Järvinen, H., Jochum, M., Jung, T., Jungclaus, J. H., Keenlyside, N. S., Klocke, D., Konow, H., Klose, M., Malinowski, S., Martius, O., Mauritsen, T., Mellado, J. P., Mieslinger, T., Mohino, E., Pawłowska, H., Peters-von Gehlen, K., Sarré, A., Sobhani, P., Stier, P., Tuppi, L., Vidale, P. L., Sandu, I., and Stevens, B. nextGEMS: entering the era of kilometre-scale Earth System modelling. *Geoscientific Model Development* **18**, 7735–7761 (2025).

Baker, A. J. Tropical cyclones and climate change. *Geography Review* **39**, 2–5 (2025). [Invited outreach article]

Wang, Z., Rios-Berrios, R., Stern, D. P., **Baker, A. J.**, Beucler, T., Camargo, S. J., Duvel, J.-P., Feng, X., Lee, C.-Y., Leroux, M.-D., Li, H., Macholl, J., Molina, M. J., Núñez Ocasio, K. M., Ramsay, H. A., Ritchie, E. A., Schenkel, B. A., Stansfield, A. M., Ayar, P. V., and Wisinski, E. On the Definition of Tropical Cyclone Seeds from a Climate Perspective. *Bulletin of the American Meteorological Society* **106**, E1815–E1822 (2025).

Lockwood, J., Athanasiadis, P., **Baker, A. J.**, Guentchev, G., Priestley, M., Roberts, M. J., Vidale, P. L., and Zappa, G. The effect of increasing model resolution on the Northern Hemisphere winter mid-latitude storm track: An equatorward shift due to contraction of the Hadley cell. *Journal of Climate* **38**, 4539–4551 (2025).

Baker, A. J., Vannière, B., and Vidale, P. L. On the realism of tropical cyclones simulated in global storm-resolving climate models. *Geophysical Research Letters* **51**, e2024GL109841 (2024).

Huang, H., Collins, W. D., Patricola, C. M., Ruprich-Robert, Y., Ullrich, P. A., and **Baker, A. J.** Contrasting Responses of Atlantic and Pacific Tropical Cyclone Activity to Atlantic Multidecadal Variability. *Geophysical Research Letters* **50**, e2023GL102959 (2023).

Athanasiadis, P., Ogawa, F., Schiemann, R. K. H., **Baker, A. J.**, Bellucci, A., Ruggieri, P., Haarsma, R. J., Vidale, P. L., Omani, N.-E., Novak, L., and Gualdi, S. Mitigating climate biases in mid-latitude North Atlantic via increasing model resolution: SST gradients and their relation to blocking and the jet. *Journal of Climate* **35**, 3385–3406 (2022).

Baker, A. J., Roberts, M. J., Vidale, P. L., Hodges, K. I., J., Seddon, J., Vannière, B., Haarsma, R. J., Schiemann, R., Kapetanakis, D., Tourigny, E., Lohmann, K., Roberts, C. D., and Terray, L. Extratropical transition of tropical cyclones in a multi-resolution ensemble of atmosphere-land-only and fully coupled global climate models. *Journal of Climate* **35**, 5283–5306 (2022).

Baker, A. J., 2022. Tropical cyclones: Global decline in frequency. *Nature Climate Change* **12**, 615–617 (2022).

Bhatia, K. T., **Baker, A. J.**, Yang, W., Vecchi, G., Knutson, T., Murakami, H., Kossin, J., Hodges, K. I., Dixon, K., Bronselaer, B., and Whitlock, C. A potential explanation for the global increase in tropical cyclone rapid intensification. *Nature Communications* **13**, 6626 (2022).

Sainsbury, E. M., Schiemann, R. K. H., Hodges, K. I., **Baker, A. J.**, Shaffrey, L. C., Bhatia, K. T. What Governs the Interannual Variability of Recurving North Atlantic Tropical Cyclones? *Journal of Climate* **35**, 3627–3641 (2022).

Sainsbury, E. M., Schiemann, R. K. H., Hodges, K. I., **Baker, A. J.**, Shaffrey, L. C., and Bhatia, K. T. Why Do Some Recurving Tropical Cyclones Impact Europe? *Monthly Weather Review* **150**, 2553–2571 (2022).

Sainsbury, E. M., Schiemann, R. K. H., Hodges, K. I., **Baker, A. J.**, Shaffrey, L. C., Bhatia, K. T., and Bourdin, S. Can low-resolution CMIP6 ScenarioMIP models provide insight into future European Post-Tropical Cyclone risk? *Weather and Climate Dynamics* **3**, 1359–1379 (2022).

Baker, A. J., Hodges, K. I., Schiemann, R., and Vidale, P. L. Historical Variability and Lifecycles of North Atlantic Midlatitude Cyclones Originating in the Tropics. *Journal of Geophysical Research: Atmospheres* **126**, e2020JD033924 (2021).

Baldini, J. U. L., Lechleitner, F. A., Breitenbach, S. F. M., van Hunen, J., Baldini, L. M., Wynn, P. M., Jamieson, R. A., Ridley, H. E., **Baker, A. J.**, Walczak, I. W., and Fohlmeister, J. Detecting and quantifying palaeoseasonality in stalagmites using geochemical and modelling approaches. *Quaternary Science Reviews* **254**, 106784 (2021).

Sainsbury, E. M., Schiemann, R. K. H., Hodges, K. I., Shaffrey, L. C., **Baker, A. J.**, and Bhatia, K. T. How important are Post-Tropical Cyclones to European Windstorm Risk? *Geophysical Research Letters* **47**, e2020GL089853 (2020).

Bador, M., Boé, J., Terray, L., Alexander, L. V., **Baker, A. J.**, Bellucci, A., Haarsma, R., Koenigk, T., Moine, M.-P., Lohmann, K., Putrasahan, D. A., Roberts, C., Roberts, M., Scoccimarro, E., Schiemann, R., Seddon, J., Senan, R., Valcke, S., and Vannière, B. Impact of higher spatial atmospheric resolution on precipitation extremes over land in global climate models. *Journal of Geophysical Research: Atmospheres* **125**, e2019JD032184 (2020).

Fabiano, F., Christensen, H. M., Strommen, K., Athanasiadis, P., **Baker, A. J.**, Schiemann, R., and Corti, S. Euro-Atlantic weather regimes in the PRIMAVERA coupled climate simulations: impact of resolution and mean state biases on model performance. *Climate Dynamics* **54**, 5031–5048 (2020).

Baker, A. J., Schiemann, R., Hodges, K. I., Demory, M.-E., Mizielinski, M. S., Roberts, M. J., Shaffrey, L. C., Strachan, J., and Vidale, P. L. Enhanced climate change response of wintertime North Atlantic circulation, cyclonic activity and precipitation in a 25-km-resolution global atmospheric model. *Journal of Climate* **32**, 7763–7781 (2019).

Roberts, M. J., **Baker, A. J.**, Blockley, E. W., Calvert, D., Coward, A., Hewitt, H. T., Jackson, L. C., Kuhlbrodt, T., Mathiot, P., Roberts, C. D., Schiemann, R., Seddon, J., Vannière, B., and Vidale, P. L. Description of the resolution hierarchy of the global coupled HadGEM3-GC3.1 model as used in CMIP6 HighResMIP experiments. *Geoscientific Model Development* **12**, 4999–5028 (2019).

Baker, A. J., Sodemann, H., Baldini, J. U. L., Breitenbach, S. F. M., Johnson, K. R., van Hunen, J., and Zhang, P. Seasonality of westerly moisture transport in the East Asian summer monsoon and its implications for interpreting precipitation $\delta^{18}O$. *Journal of Geophysical Research: Atmospheres* **120**, 5850–5862 (2015).

Baker, A. J., Mattey, D. P., and Baldini, J. U. L. Reconstructing modern stalagmite growth from cave monitoring, local meteorology, and experimental measurements of dripwater films. *Earth and Planetary Science Letters* **392**, 239–249 (2014).

Baker, A. J. Report on the 22nd British Cave Research Association Cave Science Symposium. *Speleology* **18**, 28–30 (2011). [Invited]

Baker, A. J. Analysis of geological structures and hydrological drainage characteristics at Washpool Crags Quarry (Weardale, UK) based on a digital outcrop model and regional climate data. One North East Studentship fieldwork and research report, Department of Earth Sciences, University of Durham (2011).

Whitaker, T., Jones, D., Baldini, J. U. L., and **Baker, A. J.** A high-resolution spatial survey of cave air carbon dioxide concentrations in Scoska Cave (North Yorkshire, UK): implications for calcite deposition and re-dissolution. *Cave and Karst Science* **36**, 85–92 (2009).

Supervision

Postdoctoral

Dr Leo Saffin (PDRA, University of Reading)
July 2023 – February 2026 (recruitment panel member)
Midlatitude processes and interactions for North Atlantic cyclones of tropical origin (*Huracán* project)

Doctoral

Lewis Grant (Ph.D., University of Reading)
October 2025 – September 2028 (recruitment panel member)
Thesis: *Unleashing the potential of high-resolution sub-seasonal tropical cyclone predictions*

Elliott Sainsbury (Ph.D., University of Reading)
October 2019 – September 2022 (*viva voce* examination completed December 2022)
Thesis: *The importance of post-tropical cyclones for extreme European weather*

Master's and undergraduate students

Chin Wai Leung (M.Sc., University of Reading, 2025)
Understanding and Modelling European Windstorm Damage

Vernie Marcellin-Honore (M.Sc., University of Reading, 2024)
Understanding and Modelling U.S Hurricane Damage

Gleniese Mckenzie (M.Sc., University of Reading, 2024)
Using XGBoost and Explainable AI to Understand the Effects of ENSO on North Atlantic Hurricane Propagation Speed and Intensification

James Michelin (B.Sc., University of Reading, 2024)
Does the inclusion of socio-economic variables into a new tropical cyclone classification improve our ability to forecast their damage?

Additional supervision of several overseas student summer projects on cyclone-related projects.

Indicators of esteem

Invited talks

'Tropical cyclones in global storm-resolving models'
TROPICANA (Institut Pascal, Paris, June 2024)

'Tropical cyclone intensification and structure in global storm-resolving models'
New York ICCP–GSRA Meeting on Tropical Cyclones and Global Storm-Resolving Analysis (University of Tokyo New York Office, New York, February 2024)

'North Atlantic post-tropical cyclones'
IOGP Metocean Committee: Seminar on Extratropical Storms (London, September 2019)

Peer review

Journals | *Nature*; *Nature Geoscience; Nature Climate Change; Geophysical Research Letters; Nature Communications; Journal of Climate; The Lancet; npj Climate & Atmospheric Science; Scientific Reports; Environmental Research Letters; Hydrological Processes; Scientific Data; Weather; Geochemistry, Geophysics, Geosystems; Geochimica et Cosmochimica Acta*

Grants | Dutch Research Council (NWO) Open Competition Domain Science (2026); University of Wisconsin–Milwaukee Discovery and Innovation Grant (2023)

Reports | International Panel on Climate Change (IPCC) *Sixth Assessment Report (AR6) Climate Change 2021: The Physical Science Basis* (Working Group I) [named in Annex X]

Consultancy

2025, Climate X (second review of tropical cyclone hazard model)
2024, Climate X (review of tropical cyclone hazard and loss models)

2022, Offshore Consulting Group (tropical cyclone tracking and analysis)

Recognition

2025 Celebrating Success award, University of Reading
2020 Celebrating Success award, University of Reading

Grants and awards

2022 *Huracán* (contributor ~7%) (NERC–NSF Large Grant, £3.7M, £700K to Reading)
2018 Legacies Fund (Royal Meteorological Society, £500)
2017 Researcher Travel Grant (University of Reading, £417)
2010 Young Researcher of the Year (British Cave Research Association, £500)
2009 Margaret Fergusson Travel Scholarship (St Mary's College, Durham, £500)
2008 Irene Calvert Travel Bursary (St Mary's College, Durham, £400)

Continuous professional development

Research skills

- Linux environment (~10 years' experience) and use of large batch-computing clusters (JASMIN and Levante)
- Coding in Python, R, Matlab, and use of climate-specific tools (e.g., cdo, nco)
- Advanced analysis (e.g., cyclone-tracking algorithms, analysis of weather and climate extremes)
- Managing and analysing climate model output and observational datasets, and proficiency with data formats and standards (e.g., cf, NetCDF, GRIB2)
- Developing scientific collaboration and research coordination, including project management
- Manuscript preparation for publication
- Scientific writing for non-specialist audiences (e.g., *Geography Review*, *The Conversation*)

Hackathons

- Global to regional km-scale hackathon (Met Office, May 2026)
- UK Centre for Greening Finance and Investment Hackathon on "Global characteristics of tropical cyclones: climate risk analytics for the reinsurance industry" (University of Leeds, June 2025)
- The World Climate Research Programme Global Km-scale Hackathon (University of Oxford, May 2025)
- nextGEMS Final Hackathon (Swedish Museum of Natural History, March 2025)
- nextGEMS Hazard Hackathon (Wageningen University and Research, October 2024)
- nextGEMS Cycle 4 Hackathon (Max-Plank Institute for Meteorology, March 2024)
- nextGEMS Cycle 3 Hackathon (Universidad Complutense de Madrid, May 2023)
- nextGEMS Cycle 2 Hackathon (University of Vienna, June 2022)

Professional training

- *Crowdhelix* (EU funding collaboration platform) training (University of Reading, May 2025)
- Writing a Data Management Plan (University of Reading, February 2025).
- Résumé for Research and Innovation (University of Reading, December 2024).
- Equality, Diversity and Inclusion training (NCAS, September 2024)
- Research Project Management (NCAS, June 2022).
- Met Office Unified Model Introduction (NCAS, November 2018).
- Networking for Research Staff (University of Reading, June 2016).

Additional research and laboratory training

- Laboratory training in micromilling and introduction to ICP-mass spectrometry (University of Durham, March 2015).
- Isotope Forward Modelling Workshop (University of Melbourne, October 2014).
- Collaborator, *HURRICANE Project* (University of Durham, October 2010 – June 2013).
- Terrestrial LiDAR and hydrological modelling for a commercial environmental restoration project (University of Durham, September – December 2010).

Academic citizenship

Research coordination

- Project manager for *Huracán* (NERC–NSF Large Grant, 2023–2026)
- Co-ordinator for Department of Meteorology External Seminar Series (2025–)

- Organiser for fortnightly HRCM group (High-Resolution Climate Modelling; University of Reading–Met Office long-term collaboration) and bimonthly MetTC (University of Reading group) meetings / seminars
- Member of NCAS Equality, Diversity and Inclusion Committee
- Website administrator for HRCM (hrcm.ceda.ac.uk), *Huracán* (research.reading.ac.uk/huracan), MetTC group (research.reading.ac.uk/tropical-cyclones)
- House, Health and Safety Representative on the School of Mathematical, Physical and Computational Sciences' Research Staff Forum at the University of Reading.

Professional memberships

- Associate Fellow, Royal Meteorological Society
- Member, European Geophysical Union
- Fellow, Geological Society of London (FGS)

Teaching experience

Postgraduate / postdoctoral (2016–)

- NCAS Climate Modelling Summer School (biennial): demonstrator and co-organiser, University of Cambridge, 2025, 2023, 2021 (virtual), 2019, and 2017.
- 3rd European Earth System and Climate Modelling School: demonstrator, University of Helsinki, 10th–21st June 2016.

Undergraduate (2010–2013)

- Certified demonstrating training and 3 years' experience in undergraduate climate science and palaeobiology practical classes and research project supervision.
- Led fieldwork in Utah, USA (MSci level; nominated for an 'Excellence in Demonstrating' award), Cyprus (BSc level), and the English Lake District (BSc level), each including student assessment.

Secondary and further education (2009)

- Assistant KS3 physics and AS-Level Critical Thinking teacher in Staindrop School, County Durham (National Student Associates Scheme).

Additional higher education experience

School of Biological and Chemical Sciences, Queen Mary, University of London
October 2015 – February 2016
Admissions Administrator
Key responsibilities:

- Data analysis to inform revision of School's undergraduate entry requirements.
- Co-designed a process with senior academic staff to simplify future admissions data analysis.
- Organiser for College-wide and School open days.
- Managing register of undergraduate applications and handling confidential application data.

Referees

Prof. Pier Luigi Vidale (line manager)
Department of Meteorology, University of Reading, Whiteknights, Reading, Berkshire RG6 6ES, UK
p.l.vidale@reading.ac.uk

Dr Kevin I. Hodges (frequent collaborator)
Department of Meteorology, University of Reading, Whiteknights, Reading, Berkshire RG6 6ES, UK
k.i.hodges@reading.ac.uk

Prof. James U. L. Baldini (Ph.D. supervisor)
Department of Earth Sciences, University of Durham, Science Laboratories, South Road, Durham DH1 3LS, UK
james.baldini@durham.ac.uk

Appendix 1 | **Conference contributions**

Only first-author presentations are listed.

Baker, A. J., Shipley, D., E. Mckinnon-Gray, E., Vidale, P. L., and Methven, J. Inter-scale transfer of kinetic energy by tropical cyclones (2026).

Baker, A. J., Vannière, B., and Vidale. Tropical cyclones in global storm-resolving models. TROPICANA Meeting, Institut Pascal (2024). ***INVITED***

Baker, A. J., Vannière, B., and Vidale. Tropical cyclone intensification in global storm-resolving models. New York ICCP-GSRA Meeting on Tropical Cyclones and Global Storm-Resolving Analysis (University of Tokyo New York Office, New York (2024). ***INVITED***

Baker, A. J., Vidale, P. L., Hodges, K., Roberts, M. J., and Sutton, R. Historical and future North Atlantic extratropical cyclone activity in HighResMIP simulations. ACSIS Final Science Meeting, Oxford (2022).

Baker, A. J., Vidale, P. L., Roberts, M. J., Hodges, K., Seddon, J., Tourigny, E., Lohmann, K., Roberts, C. D., and Terray, L. Impact of Atlantic multidecadal variability on North Atlantic tropical cyclones and extratropical transition. European Geophysical Union General Assembly, Vienna (2022). *EGU Sphere*, EGU22-2314.

Baker, A.J., Hodges, K.I., and Vidale, P.L. Historical variability and landfall characteristics of North Atlantic post-tropical cyclones. Symposium on Hurricane Risk in a Changing Climate, Key Largo (2022).

Baker, A. J., Vidale, P. L., Hodges, K., Roberts, M. J., Hodson, D., and Lohmann, K. Impact of Atlantic multidecadal variability on North Atlantic tropical cyclones and extratropical transition in coupled global climate models. American Geophysical Union Fall Meeting, virtual (2021).

Baker, A. J., Hodges, K., Schiemann, R., and Vidale, P. L. Historical variability and landfall characteristics of North Atlantic post-tropical cyclones. American Meteorological Society 34th Conference on Hurricanes and Tropical Meteorology, virtual (2021).

Baker, A. J., Hodges, K., Schiemann, R., and Vidale, P. L. Historical variability and lifecycles of North Atlantic midlatitude cyclones originating in the tropics. Atmospheric Science Conference, virtual (2021).

Baker, A. J., Hodges, K., Roberts, M., Haarsma, R., Kapetanakis, D., Seddon, J., Schiemann, R., Doblas-Reyes, F., Lohmann, K., Roberts, C. D., Terray, L., Bellucci, A., and Vidale, P. L. Extratropical transition of tropical cyclones in global climate models. American Geophysical Union Fall Meeting, virtual (2020).

Baker, A. J., Hodges, K., Schiemann, R., and Vidale, P. L. North Atlantic post-tropical cyclones in reanalyses. American Geophysical Union Fall Meeting, San Francisco (2019).

Baker, A. J., Hodges, K., Schiemann, R., and Vidale, P. L. North Atlantic post-tropical cyclones. IOGP Metocean Committee: Seminar on Extratropical Storms, London (2019). ***INVITED***

Baker, A. J., Hodges, K., Haarsma, R., Schiemann, R., and Vidale, P. L. North Atlantic Post-Tropical Cyclones in Reanalysis Datasets. Atmospheric Science Conference, University of Birmingham (2019).

Baker, A. J., Hodges, K., Haarsma, R., Schiemann, R., and Vidale, P. L. North Atlantic post-tropical cyclones in reanalysis datasets. European Geoscience Union 16th General Assembly, Vienna (2019). *Geophysical Research Abstracts* **21**, 16151.

Baker, A. J., Schiemann, R., Hodges, K., Roberts, M. L., and Vidale, P. L. Extratropical cyclones and extreme precipitation in high-resolution global climate models. 8th GEWEX Open Science Conference: Extremes and Water on the Edge, Canmore, Canada (2018).

Baker, A. J., Hodges, K., Schiemann, R., Roberts, M. L., and Vidale, P. L. Extratropical cyclones and extreme precipitation in high-resolution global climate models. European Geoscience Union 15th General Assembly, Vienna (2018). *Geophysical Research Abstracts* **20**, 14430.

Baker, A. J., Hodges, K., Schiemann, R., and Vidale, P. L. North Atlantic post-tropical cyclones in reanalysis datasets. European Geoscience Union 15th General Assembly, Vienna (2018). *Geophysical Research Abstracts* **20**, 14606.

Baker, A. J., Schiemann, R., Hodges, K., Roberts, M.L., and Vidale, P. L. Extratropical cyclones and extreme precipitation in high-resolution global climate models. National Centre for Atmospheric Science Staff Conference, Manchester (2018).

Baker, A. J., Schiemann, R. Demory, M.-E., Hodges, K., Roberts, M., Shaffrey, L. C., and Vidale, P. L. Resolution sensitivity of the European winter rainfall response to RCP8.5 in HadGEM3. WGNE Workshop on Systematic Errors in Weather and Climate Models, Montréal (2017).

Baker, A. J., Dütsch, M., Läderach, A., Sodemann, H., Johnson, K.R., Baldini, J. U. L., Zhang, P. Modelling precipitation $\delta^{18}O$ at the northerly limit of the East Asian Summer Monsoon region. 7th International Conference Climate Change: The Karst Record, University of Melbourne (2014).

Baker, A. J., Sodemann, H., Breitenbach, S. F. M., Johnson, K. R., Baldini, J. U. L., van Hunen, J., and Zhang, P. Asian Monsoon moisture transport 1999-2005 and its implications for palaeomonsoon reconstructions. 23rd Goldschmidt Meeting, Florence (2013). *Mineralogical Magazine* **77**, 644.

Baker, A. J., Sodemann, H., Breitenbach, S. F. M., Johnson, K. R., Baldini, J. U. L., van Hunen, J., and Zhang, P. Asian Monsoon moisture transport 1999–2005 and its implications for palaeomonsoon reconstructions. American Geophysical Union Fall Meeting, San Francisco (2013).

Baker, A. J., Baldini, J. U. L., and Mattey, D. P. Modelling stalagmite growth rate and oxygen isotope composition. European Geoscience Union 8th General Assembly, Vienna (2011). *Geophysical Research Abstracts* **13**, 11750.

Baker, A. J., Baldini, J. U. L., Whitaker, T., and Jones, D. Modelling the growth rate and oxygen isotope composition of stalagmites. British Cave Research Association 22nd Cave Science Symposium, Cardiff University (2011). *Cave and Karst Science* **38**, 96.

Baker, A. J. and Baldini, J. U. L. Spatial and temporal variability in cave atmosphere pCO_2 and modelled stalagmite growth rates at Scoska Cave (North Yorkshire, UK): implications for calcite $\delta^{18}O$ records. British Cave Research Association 21st Cave Science Symposium, University of Bristol (2010). *Cave and Karst Science* **37**, 23.

Appendix 2 | **Media engagement**

Hurricane Melissa is a warning – why violent storms are increasingly catching the world off guard	
The Conversation, 30th October 2025, doi.org/10.64628/AB.xkc9tvfdw	Baker *et al*. 2024
Thousands feared dead as Cyclone Chido devastates southeast Africa	
Envirolink, 18th December 2024	Invited expert comment
Thousands feared dead as Cyclone Chido devastates southeast Africa	
Mongabay, 18th December 2024	Invited expert comment
Mayotte cyclone before and after images show destruction	
The Independent, 17th December 2024	Invited expert comment
Many feared dead as cyclone hits French territory of Mayotte	
Financial Times, 16th December 2024	Invited expert comment
Mayotte: Cyclone Chido expert reaction	
University of Reading Expert Comment, 16th December 2024	Invited expert comment
Hurricane Milton: What are hurricanes and is climate change making them more damaging?	
NCAS News, 10th October 2024	Invited expert comment
Fler orkaner väntas drabba Europa—"skäl för oro"	
[More hurricanes are expected to affect Europe — "reason for concern"]	
Dagens Nyheter [Swedish], 7th October 2024	Baker *et al*., 2021
How climate change affects Japan's typhoons	
The Japan Times, 3rd October 2024	Invited expert comment
California homeowners 'can no longer get insurance' with wildfires expected to get worse	
The Mirror, 1st June 2023	Invited expert comment
Cyclone Freddy: The rare 'zombie storm' that is baffling meteorologists	
ITV, 9th March 2023	Invited expert comment
Storms more likely to intensify rapidly due to climate change	
NCAS News, 21st November 2022	Bhatia *et al*., 2022
Hurricanes more likely to intensify within hours due to changing climate	
Meteorological Technology International, 21st November 2022	Bhatia *et al*., 2022
More intense hurricanes form rapidly due to climate change	
University of Reading News, 14th November 2022	Bhatia *et al*., 2022
Hurricane Ida was almost certainly made worse by climate change	
New Scientist, 31st August 2021	Invited expert comment
Severe storms from tropics reach Europe once every five years on average	
The Conversation, 18th May 2021, doi.org/10.64628/AB.t57dgn3tc	Baker *et al*., 2021

Frozen lakes and underground waterfalls: Inside the Dark Star deep cave system	
Science Focus, 12th May 2021	Invited expert comment
New analysis reveals a 'surprisingly high' number of landfalling tropical cyclones	
Academic Times, 2nd May 2021	Baker *et al.*, 2021
Conquering the underground Everest	
BBC Science Focus Magazine, April 2021	Invited expert comment
Storms intensify in the Atlantic	
Financial Times, 31st January 2021	Invited expert comment
Recent progress in simulating North Atlantic weather regimes	
Weather and Climate @ Reading, 5th October 2020	Fabiano *et al.*, 2021
High-resolution insights into future European winters	
Weather and Climate @ Reading, 21st October 2019	Baker *et al.*, 2019
Taking a closer look at Europe's future winters	
NCAS News, 1st October 2019	Baker *et al.*, 2019
North Atlantic post-tropical cyclones	
Weather and Climate @ Reading, 7th January 2019	Baker *et al.*, 2021