

BENJAMIN A. LAKEN

Experienced interdisciplinary researcher with skills in Python and Data Science.

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EXPERIENCE

Research Software Engineer

March 2016–present

Research IT Services, University College London

- Role focused on discipline-independent research software engineering.

Postdoc Research Fellow

August 2014–February 2016

Dept. Geoscience, University of Oslo

- Interdisciplinary research projects related to the impacts of climate change, using big data, from remote sensing and climate models. The role involved supporting researchers across disciplines of Biology/Ecology, and hydrology.

Severo Ochoa Postdoc Research Fellow

January 2013–July 2014

Investigación, Instituto de Astrofísica de Canarias

- Research related to links between the Sun, space weather, and the Earth's atmosphere. Much of this work was carried out in the context of a COST action.

Postdoc Research Fellow

September 2010– December 2012

Investigación, Instituto de Astrofísica de Canarias

- Research into Earth's short-wave reflectance, measured from the Canary Islands (Earthshine project). The role included software development, training/supervision of observers, and conducting research into clouds, aerosols, and Earth's radiative balance.

Associate Tutor

2007–2010

University of Sussex

- Grade 6 Associate Tutor, role included teaching seminars, field classes, computer classes, and assessing undergraduate exams.
- Topics included: *Introduction to Geographical Methods and Statistics* (2007–2010), *Remote Sensing and Geographical Information Systems* (2007–2010), and *Natural Environment* (2009–2010).

EDUCATION

Ph.D. Physical Geography

2007–2010

School of Global Studies, Sussex University, England

Title: *Analysing and modelling daily time-scale climate anomalies associated with a link between galactic cosmic rays and clouds*. Project involved statistical analysis of satellite observations, reanalysis data, and the use of HadAM general circulation model experiments to investigate proposed links between Earth's weather and space environment.

Geography B.Sc.(hons.)

2004–2007

School of Global Studies, University of Sussex, England. *Transcript available on request.*

EXAMPLES OF INTERNATIONAL RECOGNITION

- Invited evaluator of the FP7 EU project PERICLES during a workshop at the Belgium Institute for Space Aeronomy, 29th October, 2015.

- Invited to contribute to the COST ES1005 action book, Earth's Climate Response to a Changing Sun.
- Invited to teach Data analysis in Python at the 2nd training school of TOSCA, Solar variability and climate response, 13–17 October 2014, Trieste, Italy.
- Invited to be a contributing author to Chapter 7 of the IPCC AR5.

PUBLISHED RESEARCH

157 citations since 2010, h-index: 9, i10-index: 7 (Google Scholar on 18 Jan 2016).

Book Chapters

Laken B.A. & Čalogović J. (2015), *Chapter 4.7 The impact of cosmic rays on clouds*, in Earth's climate response to a changing Sun, eds. Dudok de Wit et al., EDP Sciences, ISBN: 978-2-7598-1733-7.

Contributing Author to Boucher O. & Randall D. *et al.* (2013), *The physical science basis, Chapter 7: Clouds and Aerosols*, Intergovernmental Panel on Climate Change Working Group 1 Fifth Assessment Report.

Peer Reviewed Articles

Laken B.A. & Stordal F. (2016), *Are there statistical links between the direction of European weather systems and ENSO, the Solar cycle, or stratospheric aerosols?*, Royal Society Open Science, *decision pending*.

Laken B.A. (2016), *Can Open Science save us from a solar-driven monsoon?*, Journal of Space Weather and Space Climate, *accepted*.

Laken B.A., Parviainen H., Garcia-Gil A., Munoz-Tunon C., Varela A., Fernandez S. & Pallé P (2016), *Thirty years of atmospheric extinction from telescopes of the North Atlantic Canary Archipelago*, J. Climate, doi: 10.1175/jcli-d-14-00600.1.

Čalogović & **Laken B.A.** (2015), *Reflections on the late Cosmoclimatology*, Central European Astrophysical Bulletin, 39, 145–160, bib-code: 2015CEAB...39..145C.

Laken B.A. (2015), *Comment on 'The influence of cosmic ray variability on the monsoon rainfall and temperature' by Baddrudin and Aslam*, arXiv:1502.00505 [physics.ao-ph].

Laken B.A. & Vaquero J. (2014), *An early clear sky record from Eastern Spain: 1837–1879*, International J. Climatology, doi:10.1002/joc.4033.

Laken B.A. & Shahbaz T. (2014), *Satellite-detected carbon monoxide pollution during 2000-2012: examining global trends and also regional anthropogenic periods over China, the EU and the USA*, Special issue on 'Emission impacts on Aerosol–Climate feedbacks' in Climate MDPI, 2(1), 1–16, doi:10.3390/cli2010001.

Laken B.A. & Čalogović J. (2013), *Does the diurnal temperature range respond to changes in the cosmic ray flux?*, Environmental Research Letters, 8, 045018, doi: 10.1088/1748-9326/8/4/045018.

Laken B.A. & Čalogović J. (2013), *Composite analysis with Monte Carlo methods: an example with cosmic rays and clouds*, J. Space Weather Space Climate, 3(A29), doi: 10.1051/swsc/2013051.

Laken B.A., Parviainen H., Pallé E. & Shahbaz T. (2013), *Saharan mineral dust outbreaks observed over the North Atlantic island of La Palma in summertime between 1984 and 2012*, Quarterly Journal of the Royal Meteorological Society, doi: 10.1002/qj.2170.

Laken B.A., Pallé E., Čalogović J. & Dunne E. (2012), *A cosmic ray–climate link and cloud observations*, J. Space Weather Space Climate, 2, A18, doi: 10.10015/swsc/2012018.

Laken B.A., Čalogović J., Shahbaz T. & Pallé E. (2012), *Examining a solar–climate link in diurnal temperature ranges*, J. Geophysical Research, 117, D18112, doi: 10.1029/2012JD17683.

Laken B.A. & Pallé E. (2012), *Understanding sudden changes in cloud amount: the Southern Annular Mode and South American weather fluctuations*, J. Geophysical Research, 117, D13103, doi: 10.1029/2012JD017626.

Laken B.A., Pallé E., Kniveton D.R., Williams C. & Kilham D.A. (2012), *Contrails developed under frontal influences of the North Atlantic*, J. Geophysical Research, 117, D11201, doi: 10.1029/2011JD017019.

Laken B.A., Pallé E. & Miyahara H. (2012), *A decade of the Moderate Resolution Imaging Spectroradiometer: is a solar–cloud link detectable?*, J. Climate, 25, 4430–4440, doi: 10.1175/JCLI-D-11-00306.1.

Laken B.A. & Čalogović J. (2011), *Solar irradiance, cosmic rays and cloudiness over daily timescales*, Geophysical Research Letters, 38, L24811, doi: 10.1029/2011GL049764.

Laken B.A., Kniveton D.R. & Wolfendale A.W. (2011), *Forbush decreases, solar irradiance variations and anomalous cloud changes*, J. Geophysical Research, 116, D09201, doi: 10.1029/2010JD014900.

Laken B.A. & Kniveton D.R. (2011), *Forbush Decreases and Antarctic cloud anomalies in the upper troposphere*, J. Atmospheric and Solar Terrestrial Physics, 72(2–3), 371–367, doi: 10.1016/j.jastp.2010.03.008.

Laken B.A., Kniveton D.R. & Frogley M. (2010), *Cosmic rays linked to rapid mid-latitude cloud changes*, Atmospheric Chemistry and Physics, 10, 10941–10948, doi: 10.5194/acp-10-10941-2010.

Laken B.A., Wolfendale A.W. & Kniveton D.R. (2010), *Cosmic ray decreases and changes in the liquid water cloud fraction over the oceans*, Geophysical Research Letters, 36, L23803, doi: 10.1029/2009GL040961.

Proceedings, Comments, and other

Laken B.A. (2015), *Comment on Badruddin and Aslam (2014)*, figshare, doi: <http://dx.doi.org/10.6084/m9.figshare.1299413>

Laken B.A. (2014), *Tanzania Precipitation and Vegetation Analysis*, figshare, doi: <http://dx.doi.org/10.6084/m9.figshare.122>

Pallé E. & **Laken B.A.** (2013), *What do we really know about cloud changes over the past decades?*, AIP Conference Proceedings, 1531, doi: 10.1063/1.4804857.

Laken B.A., Čalogović J., Beer J. & Pallé E. (2012), *Interactive comment on 'Effects of cosmic ray decreases on cloud microphysics' by J. Svensmark et al.*, Atmospheric Chemistry and Physics Discussions, 12, D18112, C962–C973.

Presentations

Approximately more than fourteen talks and three posters since 2010. Of the talks, I presented seven, while eleven were given by co-authors. Four of the talks were invited, of these I presented three. A list of the talks is available at http://www.files.benlaken.com/documents/Presentation_list.pdf

GRANTS

COST (Action ES1005) Short Term Scientific Mission

Visitor: Kapolková H. (University of Prague) · Host: **Laken B.**

Location: Instituto de Astrofísica de Canarias, Tenerife, Spain

Title: *Investigating possible relationships between the synoptic conditions of Europe and solar activity COST-STSM-ES1005-15352, total amount €1,800*

Duration: 25th Oct. to 15th Nov. 2013.

COST (Action ES1005) Short Term Scientific Mission

Visitor: **Laken B.A.** (IAC), Host: Čalogović J.

Location: Hvar Observatory/Zagreb University, Croatia

Title: *Monte Carlo methods for superposed epoch analysis: an example with cosmic rays and clouds COST-STSM-ES1005-13470, total amount €2,240*

Duration: 19th April to 15th May 2013.

COST (Action ES1005) Short Term Scientific Mission

Visitor: Čalogović J. (University of Zagreb) · Host: **Laken B.A.**

Location: Instituto de Astrofísica de Canarias, Tenerife, Spain

Title: *Towards a better assessment of data limitations in the evaluation of a solar–cloud link COST-STSM-ES1005-9537, total amount €2,100*

Duration: 8th Feb. to 24th May 2012.

FELLOWSHIPS AND PROFESSIONAL BODIES

Elected fellow of the Royal Meteorological Society (FRMetS) since 2013.

Software Carpentry Instructor (since December 2015).

REVIEWER

Since 2010 I have contributed >30 reviews in the following journals.

Annales Geophysicae · Atmospheric Chemistry and Physics · Atmospheric Pollution Research · Advances in Space Research · Earth and Planetary Science · Environmental Research Letters · Geophysical Research Letters · IPCC · Journal of Atmospheric and Solar Terrestrial Physics · Journal of Climate · Journal of Geophysical Research · Journal of Space Weather and Space Climate · The European Physical Journal Plus · WIREs Climate Change

SKILLS

Computing (proficient)	Python, Git, *nix
Computing (intermediate)	LaTeX, IDL, R, NCL, FORTRAN
Languages	English (native), Spanish (conversational)

REFERENCES

Prof. Dominic Kniveton	University of Sussex, D.R.Kniveton@sussex.ac.uk
Prof. Thierry Dudok de Wit	University of Orleans, ddwit@cnrs-orleans.fr
Prof. Frode Stordal	University of Oslo, frode.stordal@geo.uio.no