Dr. Thomas Kent

Personal Details

Date of Birth:	17 July 1989
Nationality:	British
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Research interests

Mathematical and statistical modelling of atmospheric and environmental phenomena: geophysical and computational fluid dynamics, numerical methods for (non-conservative) hyperbolic problems, data assimilation and filtering theory, numerical weather prediction, climate downscaling and bias correction.

Professional work

Jan. - May 2017	Postdoctoral Research Assistant **School of Mathematics, University of Leeds, UK**
Sept. 2016 - May 2017	Maths Support Tutor **Leeds University Library, UK**
May 2013- Dec. 2016	Postgraduate Research & Tutorial Assistant **School of Mathematics, University of Leeds, and the Met Office, UK**
Sept. - Dec. 2012	Visiting Research Scientist **GEOMAR Helmholtz Centre for Ocean Research, Kiel, Germany**

Education

May 2013 - Dec. 2016	PhD Applied Mathematics **University of Leeds, UK**
Sept. 2011 - Sept. 2012	MSc Meteorology and Climatology (Distinction) **University of Birmingham, UK**
Aug. 2009 - Aug. 2010	Exchange Year (Erasmus Program) **Technical University of Dresden, Germany**
Sept. 2007 - July 2011	BSc Mathematics (First Class (Hons)) **University of Bristol, UK**
2000 - 2007	Dover Grammar School for Boys (state selective): 4 A levels, 11 GCSEs

Scholarships and Awards

2017 EPSRC Impact Accelerator Award (Business Engagement), University of Leeds
2014 Young Scientist travel award, Int'l Symposium on Data Assimilation, Munich
2013 EPSRC CASE award (Univ. of Leeds and the Met Office; 3.5 years)
2012 EU COST Action VALUE Short Term Scientific Mission grant for 3 month research visit to GEOMAR, Kiel, Germany.

Publications

Journals:

2 **Kent, T.**, Bokhove, O., Tobias, S.M. (2017): Dynamics of an idealized fluid model for investigating convective-scale data assimilation. *Tellus A*: in review.

1 Wong, G., Maraun, D., Vrac, M., Widmann, M., Eden, J.M, and **Kent, T.** (2014): Stochastic model output statistics for bias correcting and downscaling precipitation including extremes. *J. Climate*. 27, 6940–6959. doi: http://dx.doi.org/10.1175/JCLI-D-13-00604.1

Theses:

2 **Kent, T.** (2016): An idealised fluid model of convective-scale NWP: dynamics and data assimilation. *PhD Thesis, University of Leeds*. Available at: http://etheses.whiterose.ac.uk/17269/

1 **Kent, T.** (2012): Stochastic correction and downscaling of daily precipitation via a probability mixture model. *MSc Thesis, University of Birmingham*.

Teaching experience

› Maths support tutor, Leeds University Library (2016/17)
Providing one-to-one and small-group assistance at the Skills@Library drop-in service (3hrs/week), primarily for level 0 and 1 undergraduates from mathematics, engineering, and business/finance, but open to all students from disciplines with a numerate aspect.

› Tutorial assistant, School of Mathematics, Leeds (2013-17)
Holding tutorials (1hr/week, 10-15 students per group) for level 1 mathematics courses, providing support for weekly assignments and the lectures in general. Courses tutored:

2016/17	Calculus and Mathematical Analysis (2 groups)
2015/16	Modelling with Differential Equations; Calculus and Mathematical Analysis (2 groups)
2014/15	Mathematics 1 (comprising calculus and linear algebra); Calculus and Mathematical Analysis
2013/14	Calculus and Mathematical Analysis; Statistical Theory (level 3, marking only); Geophysical Fluid Dynamics (level 3, exercise class support).

Talks

4 invited seminars (Reading, Met Office, FU Berlin, Potsdam); 5 conference talks (in the UK, Europe, and USA); 3 internal seminars (Schools of Mathematics & Earth and Environment). Summary (excluding internal talks):

Mar. 2017	An idealised fluid model of convective-scale NWP: dynamics and data assimilation. **Invited***: Universität Potsdam and Freie Universität Berlin.*
Jan. 2017	Dynamics of an idealised fluid model of convective-scale NWP. *Dynamics of Rotating Fluids meeting, UCL.*
Nov. 2016	An idealised fluid model of convective-scale NWP: dynamics and data assimilation. **Invited***: Weather Science seminar, Met Office, Exeter.*
Nov. 2016	An idealised fluid model of convective-scale NWP: dynamics and data assimilation. **Invited***: DARC seminar, University of Reading.*
June 2015	An idealised fluid model for inexpensive DA and its relevance for NWP. *Workshop on Sensitivity Analysis and Data Assimilation in Meteorology, WV, USA.*
April 2015	A modified shallow water model for investigating convective-scale data assimilation. *EGU General Assembly, Vienna.*
July 2014	A modified shallow water model of convective-scale NWP. *CliMathNet conference 2014, University of Leeds.*
May 2014	A modified shallow water model for investigating convective-scale data assimilation. *Reading-Warwick Data Assimilation Meeting, University of Warwick.*

Public Engagement, Impact and Outreach

2017	'Armley Mills Science Fair' at Leeds Industrial Museum, 26 March 2017. 'Be Curious', the research open day of the University of Leeds, showcasing our research with free, interactive and fun activities. 25 March 2017. 'Flood recovery and resilience' conference, Bilsborrow (near Preston; organised by the Churchtown Flood Action Group), 29 Jan. 2017.
2016	'The Science of Floods', Hebden Bridge. Public event organised by Pennine Prospects and contribution from *Maths Foresees*, 8 May 2016.
2015-17	Wave tank demonstration at numerous undergraduate open days in the School of Mathematics, showcasing the maths of waves and fluid dynamics.

Computer Skills

Proficient:	Python, Matlab, LaTeX, Microsoft Office, Linux, OSX, GitHub
Intermediate:	R, html
Basic:	Fortran

Languages

English:	Native speaker
German:	Proficient (CEFR: C1, A Level: A)
French:	Basic Knowledge (GCSE: A*)
Spanish:	Basic Knowledge

Referees

Available on request.