

David A. Ridley

Email: daridley@atmos.colostate.edu

Address: 184 Burley Road, Leeds, West Yorkshire, LS4 2EU

Tel: +44 773 464 9207

Education

2004 – 2008	PhD in Atmospheric Science University of Leeds (School of the Earth and Environment)
2000 – 2004	MPhys, Physics with Space Science & Technology <i>First Class with Honours</i> University of Leicester (Department of Physics and Astronomy)
1997 – 1999	A-Levels <i>Maths (A), Physics (A), Chemistry (A)</i> Greenhead College, Huddersfield
1992 – 1997	GCSEs <i>4 A*-Grades, 4 A-Grades and 1 B-Grade</i> Huddersfield Grammar School, Huddersfield

Computing Skills

IDL – Proficient all aspects of IDL

Examples: Development of optical depth calculation for aerosol models, analysis of satellite data, widget development for interactive models, advanced visualisation for models and observations, statistical analysis

Fortran – Proficient in coding related to modelling and file manipulation

Examples: Modification of the GEOS-Chem, CiTTYCAT, GLOMAP and TOMCAT aerosol and models

UNIX – Proficient in general usage and also shell scripts

Examples: Model update scripts, scripts for multiple model runs

Excel – A good grasp of basic commands through to higher level features, such as VBA

Examples: Interactive spreadsheets, fourier transform analysis, simple modelling studies

I have a working knowledge of graphics and web design applications, such as Dreamweaver, Fireworks, PowerPoint, Photoshop and Premiere. I also have a basic to intermediate levels of knowledge in C, C++, Java, Access, SQL, Maple and MatLab.

Experience

Sept 2009 – Present	Long-range Transport of African Dust to the Americas Prof. Colette Heald <i>Atmospheric Science Department, Colorado State University, CO</i>
Description:	Running and modification of the global atmospheric model GEOS-Chem (developed at Harvard University) to simulate dust transport and deposition, and compare with observations from <i>in-situ</i> and satellite platforms.
July 2008 – Sept 2009	Uncertainties in tropospheric ozone modelling Dr Steve Arnold <i>School of the Earth and Environment, University of Leeds</i>
Description:	Determining the reaction rates that are responsible for the greatest uncertainty in modelling of key atmospheric species, such as ozone and OH. A monte-carlo methodology is used within a tropospheric trajectory, chemical transport model (CiTTYCAT). Comparisons with observations of chemical species from the ICARTT/ITOP campaign are made.
July 2008 – Sept 2009	A compact chemistry model for teaching

- Dr Steve Arnold, Dr. Mat Evans
School of the Earth and Environment, University of Leeds
- Description: Development of a compact chemistry model in IDL to allow students to explore the impact of NO_x and VOC emissions on ozone production. To be used in undergraduate workshops to give the students a more hands-on learning experience.
- Oct 2004 – Oct 2008 **Aerosol modelling and evaluation (PhD research)**
Prof. Ken Carslaw, Prof. Martyn Chipperfield
School of the Earth and Environment, University of Leeds
- Description: A state-of-the-art global model of aerosol processes (GLOMAP) was assessed and improved using the wealth of optical measurements available from *in-situ* and satellite instruments.
- July 2003 – Sept 2003 **Modelling denitrification in the polar vortex**
Dr Graham Mann, Dr Stewart Davies, Prof. Ken Carslaw, Dr Lamont Poole
School of the Earth and Environment, University of Leeds
- Description: Data acquired during the NASA SAGE III (Stratospheric Aerosol and Gas Experiment) aircraft campaign was used to test and improve understanding of the polar denitrification process, an important process controlling polar ozone levels.
- March 2003 – April 2003 **Developing visualisation software for AATSR surface temperature**
Dr Gary Corlett, Prof. David Llewellyn-Jones, Dr John Remedios
Space Research Centre, University of Leicester
- Description: A project to produce interactive prototype software for visualising land and sea surface temperatures retrieved by AATSR on a variety of resolutions.
- July 2002 – Jan 2003 **Validation of satellite-borne sea surface temperature measurements**
Dr Marianne Edwards, Prof. David Llewellyn-Jones
Space Research Centre, University of Leicester
- Description: Validation of the AATSR (Advanced Along Track Scanning Radiometer) instrument. This involved comparison of retrievals with those from several other satellites and ship-based radiometer measurements from the M-AERI campaign.

Publications & Presentations

North African Dust Export and Impacts: An Integrated Satellite and Model Perspective

D. A. Ridley, C. L. Heald, B. Ford
Submitted to JGR (2011)

Satellite observations cap the atmospheric organic aerosol budget

C. L. Heald, D. A. Ridley, S. M. Kreidenweis, E. E. Drury
Geophys. Res. Lett. 37 (2010)

The impact of uncertainty in reaction rates on key chemical species in trans-Atlantic pollution plume modelling

D. A. Ridley, S. R. Arnold
In preparation for GRL (2011)

Evaluating a modal aerosol microphysics model against a bin-resolved scheme and benchmark observational datasets in a 3D global model

G. Mann, D. A. Ridley, K. S. Carslaw
Submitted to ACP (2011)

Evaluation of the Global Model of Aerosol Processes (GLOMAP) using a combination of surface and satellite observations

D. A. Ridley, G. Mann, K. S. Carslaw
In preparation for ACP (2011)

A global model study of processes controlling aerosol size distributions in the Arctic spring and summer

H. Korhonen, K. S. Carslaw, D. V. Spracklen, D. A. Ridley and J. Ström
J. Geophys. Res. 113 (2008).

The Significance of a Weekly Cycle in Diurnal Temperature Range

D. A. Ridley, K. S. Carslaw, M. J. Evans, P. M. Forster

American Geophysical Union, Fall Meeting 2006, abstract #A33B-1004

Intercomparison of sea surface temperature measurements from AATSR with data from other satellite sensors including AVHRR, MODIS and TMI
D. T. Llewellyn-Jones, J. J. Remedios, M. C. Edwards, G. K. Corlett, D. A. Ridley
Geoscience and Remote Sensing Symposium, 2003. IGARSS '03. Proceedings. 2003 IEEE International

Using SAGE III PSC observations to derive solid particle nucleation rates in the Arctic
D. A. Ridley, K. S. Carslaw, G. Mann, S. Davies, L. R. Poole, B. Luo, T. Peter
American Geophysical Union, Fall Meeting 2003, abstract #A52G-07

Other Achievements

Teaching: **School of Earth & Environment, University of Leeds**
Leading workshops, demonstrating in problems classes and computer classes for several undergraduate physics, environment, and statistics modules

Academic: **Course Representative** (Physics and Astronomy Dept., University of Leicester)
National Chemistry Analyst Finalist (A-level)

Referees

Prof. Colette Heald
Department of Atmospheric Science
Colorado State University, Fort Collins, CO
+1 970 491 8682
Heald@atmos.colostate.edu

Dr Mat Evans
School of the Earth & Environment
University of Leeds, Leeds, West Yorkshire, LS2 9JT
+44 113 343 1594
M.J.Evans@leeds.ac.uk