Curriculum Vitae

Geoffrey K. Vallis

Education

1977. B.A., Physics, Oxford University
1981. Ph. D., Physics, London University (Imperial College).

Professional History

2020 – . Head (Chair) of Department of Mathematics, University of Exeter.
2013 – . Professor, Applied Mathematics, University of Exeter.
1998 – 2013. Professor/Senior Research Scientist, AOS Program/GFDL, Princeton Univ.
1989 – 1998. Associate Professor–Professor of Ocean Sciences.
Director, Center for Nonlinear Science, UC Santa Cruz
1983 – 1988. Assistant–Associate Researcher. SIO, UCSD.
1981 – 1983. Post-doctoral Researcher, SIO, UCSD.

Research Interests

Climate dynamics; Paleoclimate;
Geophysical fluid dynamics; Geophysical turbulence;
Dynamics of the atmosphere and ocean of Earth and other planets.

Honors, Significant Lectures etc.

Elected Fellow of the American Physical Society, 2022.
Noble Lecturer, Dept. of Physics, University of Toronto, 2019.
Adrian Gill Prize, Royal Meteorological Society, 2014.
Royal Society Wolfson Research Award, 2014.
Proudman Lecturer, NOC, Liverpool, 2014.
Philip Thompson Lecturer, NCAR, CO., 2013.
Stanislaw Ulam Distinguished Scholar, Los Alamos Nat'l Lab, 2013.
Victor Starr Memorial Lecturer, MIT, 2008.

Outreach, teaching and synergistic activity

Various public lectures on climate and climate change.
Author of non-specialist book *Climate and the Oceans*.
Former editor, *J. Atmos. Sci.; Rev. Geophysics; Fluid Dynamics Research*
Editorial Board, *Annual Rev. Fluid Mechanics,* 2020 – .
Taught numerous courses at both postgraduate and undergraduate levels.

Former Graduate and Postdoctoral Advisees

Subsequent or last known affiliation in parentheses.
M. Maltrud (LANL), A. Pares-Sierra (CICESE), P. Olla (U. Sardinia), J. Wang (Silicon Valley), K. Oetzel (Silicon Valley), J. Aroyan (unknown), M. Mundt (Seagate), R. Raskin (JPL), T. Huck (U. Brest), K. S. Smith (NYU), R. Scott (U. Brest), J. Loving (ret'd), C. Cartwright (ICF Inc.), N. Grianik (Finance), B. Fox-Kemper (Brown), B. Cash (COLA), R. Zhang (GFDL), E. Gerber (NYU), R. Zhao (Goldman Sachs), N. Fuckar (Barcelona), J. Mitchell (UCLA), A. Venaille (ENS, Lyon), J. Kidston (Finance), L. Padilla (Env. Consultant), S. Potter (U. Washington),

A. O'Rourke (JHU), M. Nikurashin (U. Hobart), G. Badin (U. Hamburg), S. Zhang (Qingdao), J. Penn (UK Met Office), J. Baker (UK Met Office), S. Thomson (Exeter), R. Geen (Birmingham), G. Colyer (Oxford), P. Maher (Exeter), M. Webb (Uk Met Office), M. Pietschnig (Oslo), Q. Liu (Insurance, China) S. Agrawal (IIS Bhopal, India), D. Dey (Southampton)

Publications

Over 150 research articles in the peer-reviewed literature, and three sole-author books. Sample below.

Books

Vallis, G. K. 2006 & 2017. *Atmospheric and Oceanic Fluid Dynamics: Fundamentals and Large-Scale Circulation.* Cambridge Univ. Press. 946 pp.

Vallis, G. K. 2011. *Climate and the Oceans.* Princeton University Press. 232 pp.

Vallis, G. K. 2019. *Essentials of Atmospheric and Oceanic Dynamics.* Cambridge Univ. Press. 360 pp.

Selection of Recent Articles

Henry, M. and Vallis, G.K., 2022. Variations on a pathway to an early Eocene climate. *Paleoce. Paleoclim.*, p. e2021PA004375. doi: 10.1029/2021PA004375

Vallis, G.K., 2021. Distilling the mechanism of the Madden–Julian oscillation into a simple translating structure. *Quart. J. Roy. Meteor. Soc.*, pp. 1–16. doi: 10.1002/qj.4114.

Henry, M. and Vallis, G.K., 2021. Reduced high-latitude land seasonality in climates with very high carbon dioxide. *J. Climate*, pp. 1–38. doi: 10.1175/JCLI-D-21-0131.1.

Colyer, G. and Vallis, G.K., 2019. Zonal-mean atmospheric dynamics of slowly-rotating terrestrial planets. *J. Atmos. Sci.*, 76, 139

Penn, J. and Vallis, G.K., 2018. Atmospheric dynamics and thermal phase-curve offset on tidally and nontidally locked exoplanets. *Astrophys. J.*, 868, 147.

Vallis, G.K., Parker, D.J. and Tobias, S.M., 2019. A simple system for moist convection: the Rainy–Bénard model. *J. Fluid Mech.*, 862, 162–199.

Vallis, G.K., Colyer, G., Geen, R., Gerber, E., Jucker, M., Maher, P., Paterson, A., Pietschnig, M., Penn, J. and Thomson, S.I., 2018. Isca, v1.0: A framework for the global modelling of the atmospheres of Earth and other planets at varying levels of complexity. *Geo. Model Dev.*, 2018. doi: 10.5194/gmd-2017-243.

Watson, A., Vallis, G.K. and Nikurashin, M., 2015. Southern ocean buoyancy forcing of ocean ventilation and glacial atmospheric CO_2. *Nature Geosciences*, 8, 861–864. Doi:10.1038/ngeo2538.

Vallis, G.K., 2016. Geophysical fluid dynamics: Whence, whither and why? *Proc. Roy. Soc. A*, 472, 1–23. doi: http://dx.doi.org/10.1098/rspa.2016.0140.

Vallis, G.K., Zurita-Gotor, P., Cairns, C. and Kidston, J., 2015. The response of the large-scale structure of the atmosphere to global warming. *Quart. J. Roy. Meteor. Soc.*, 141, 1479–1501. doi: 10.1002/qj.2456.

Nikurashin, M. and Vallis, G.K., 2012. A theory of deep stratification and interhemispheric overturning circulation and associated stratification. *J. Phys. Oceanogr.*, 42, 1652–1667.

Mitchell, J. and Vallis, G.K., 2010. The transition to superrotation in terrestrial atmospheres. *J. Geophys. Res. (Planets)*, p. 18. doi: 10.1029/2010JE003587.