

# CURRICULUM VITAE

## ROBERT M. KERR

Professorship for Computational Fluid Dynamics  
School of Engineering, Dept of Mathematics and Centre for Scientific Computing  
University of Warwick

### PERSONAL:

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### SUMMARY OF RESEARCH

Understanding turbulent and strongly nonlinear fluid dynamics presents many challenges to the mathematician and engineer. My approach is to develop and run large numerical codes representing the full equations, then use several approaches to reach a new understanding about difficult problems. This includes extensive comparisons with experiments, observations, and mathematical theories and the use of sophisticated graphics.

### EDUCATION:

1983-6 LLNL Research Fellow, Livermore, California  
1981-3 NRC Research Fellow, NASA Ames, Moffatt Field, California  
1981 Ph. D., Physics, Cornell University, Ithaca, New York  
1975 B.S. and M.S., Physics, University of Chicago, Chicago, Illinois

### PROFESSIONAL EXPERIENCE:

August, 2002 to present University of Warwick, Professor.  
August, 2000 to June, 2002 Department of Atmospheric Science and Department of Mathematics, University of Arizona, Visiting Professor.  
1986 to January, 2001 National Center for Atmospheric Research, Mesoscale and Microscale Meteorology Division. Scientist.

### COMMUNITY OUTREACH:

1998 Interview for Discovery Channel on Aviation Hazards. First aired in 1999.  
2001 Public presentation for Mathematics Awareness Week at the University of Arizona on Mathematics in Meteorology.

### MEETINGS (primary organizer)

1995: NCAR/GTP workshop on Geo- and Astrophysical Convection.  
1996: Mini-symposium on Vortex Dynamics and Turbulence at the International Congress on Theoretical and Applied Mechanics, Kyoto.  
1998: IUTAM/IUGG symposium on Developments in Geophysical Turbulence  
2005-2006: Warwick Turbulence Symposium with D Barkley, S. Nazarenko and O. Zaboronski.

### AWARDS:

1994 Honorable mention (second place) NCAR publication prize

### PUBLICATIONS

Kerr, R. M., 1985: Higher order derivative correlations and the alignment of small-scale structures in isotropic numerical turbulence. *J. Fluid Mech.*, **153**, 31.  
Kerr, R. M. 1993: Evidence for a singularity of the three-dimensional incompressible Euler equations. *Phys. Fluids A5*, 1725.  
Kerr, R.M. and Herring, J. 2000: Prandtl number dependence of Nusselt number in DNS. *J. Fluid Mech.* **419**, 325–344.  
Kerr, R.M., Meneguzzi, M., and Gotoh, T., 2001: An inertial range length scale in structure functions. *Phys. Fluids* **13**, 1985–1994.

Or go to [http://www.eng.warwick.ac.uk/staff/rmk/kerr\\_pubs/pub.pdf](http://www.eng.warwick.ac.uk/staff/rmk/kerr_pubs/pub.pdf)