

## Curriculum Vitae

**NAME:** Jimmy Dudhia

**BORN:** 20 September 1957 **PLACE:** Beckenham, London, United Kingdom

**NATIONALITY:** British **STATUS:** Male, single

### **EDUCATION:**

1969-1976 Selhurst High School, Croydon, U.K.

1979 B.Sc (I Class Hon.) Physics, Imperial College, University of London

1980 M.Sc Atmospheric Physics and Dynamics, Imperial College

1984 Ph.D Meteorology, Imperial College

### **EMPLOYMENT:**

1980-1985 Research Assistant, Atmospheric Physics Group, Physics Department, Imperial College

1985-1989 Research Associate, Department of Meteorology, The Pennsylvania State University, U.S.A.

1989-1993 Visiting Scientist, Mesoscale Prediction Section, Mesoscale and Microscale Meteorology Division, National Center for Atmospheric Research, U.S.A.

1993-1997 Associate Scientist III, Mesoscale Prediction Group, Mesoscale and Microscale Meteorology Division, National Center for Atmospheric Research, U.S.A.

1997-1998 Project Scientist I, Mesoscale Prediction Group, Mesoscale and Microscale Meteorology Division, National Center for Atmospheric Research, U.S.A.

1998-present Project Scientist II, Mesoscale Prediction Group, Mesoscale and Microscale Meteorology Division, National Center for Atmospheric Research, U.S.A.

### **MEMBERSHIPS/COMMITTEES:**

Fellow of the Royal Meteorological Society (U.K.)

Member of the American Meteorological Society since 1986

Committee for 2nd Symposium on Tropospheric Profiling: Needs and Technologies, 1991.

Member of the WRF Science Board since 2000

Associate Editor of Monthly Weather Review 2000-2002

Associate Editor of Weather and Forecasting 2004-

## PUBLICATIONS:

Dudhia, J., 1984: A numerical study of tropical band convection. Ph.D. Thesis, Imperial College, University of London, 185pp.

Dudhia, J. and M.W.Moncrieff, 1987: A numerical simulation of quasi-stationary tropical convective bands. *Quart. J. Roy. Meteor. Soc.*, **113**, 929–967.

Dudhia, J., M.W.Moncrieff and D.W.K.So, 1987: The two dimensional dynamics and simulation of west African squall lines. *Quart. J. Roy. Meteor. Soc.*, **113**, 121–145.

Dudhia, J., 1989: Numerical study of convection observed during the Winter Monsoon Experiment using a mesoscale two-dimensional model. *J. Atmos. Sci.*, **46**, 3077–3107.

Dudhia, J. and M.W.Moncrieff, 1989: A three-dimensional numerical study of an Oklahoma squall line containing right-flank supercells. *J. Atmos. Sci.*, **46**, 3363–3391.

Warner, T.T., Y.-H. Kuo, J.D. Doyle, J. Dudhia, D.R. Stauffer and N.L. Seaman, 1992: Nonhydrostatic meso-beta scale, real-data simulations with the Penn State University / National Center for Atmospheric Research mesoscale model. *Meteorology and Atmospheric Physics* **49**, 209–227.

Dudhia, J., 1993: A nonhydrostatic version of the Penn State / NCAR mesoscale model: Validation tests and simulations of an Atlantic cyclone and cold front. *Mon. Wea. Rev.*, **121**, 1493–1513.

Dudhia, J., 1995: Reply to comment on "A nonhydrostatic version of the Penn State / NCAR mesoscale model: Validation tests and simulations of an Atlantic cyclone and cold front" by J. Steppeler. *Mon. Wea. Rev.*, **123**, 2573–2575.

Oncley, S. P., and J. Dudhia, 1995: Evaluation of surface fluxes from MM5 using observations. *Mon. Wea. Rev.*, **123**, 3344–3357.

Dudhia, J., 1996: Back to basics: Thunderstorms: Part 1. *Weather*, **51**, 371–376.

Dudhia, J., 1997: Back to basics: Thunderstorms: Part 2. *Weather*, **52**, 2–7.

Parsons, D. B., and J. Dudhia, 1997: Testing of a data assimilation system in support of the goals of the Atmospheric Radiation Measurement Program. *Mon. Wea. Rev.*, **125**, 2353–2381.

Petch, J. C., and J. Dudhia, 1998: The importance of the horizontal advection of hydrometeors in a single-column model. *J. Climate*, **11**, 2437–2452.

Y.-R. Guo, Y.-H. Kuo, J. Dudhia, and D. B. Parsons, 2000: Four-dimensional variational data assimilation of heterogeneous mesoscale observations for a strong convective case. *Monthly Weather Review*, **128**, 619–643.

Chen, F., and J. Dudhia, 2001: Coupling an advanced land-surface/hydrology model with the Penn State/NCAR MM5 modeling system. Part I: Model description and implementation. *Mon. Wea. Rev.*, **129**, 569–585.

Chen, F., and J. Dudhia, 2001: Coupling an advanced land-surface/hydrology model with the Penn State/NCAR MM5 modeling system. Part II: Model validation. *Mon. Wea. Rev.*, **129**, 587–604.

Dudhia, J., and J. F. Bresch, 2002: A global version of the PSU-NCAR mesoscale model. *Mon. Wea. Rev.*, **130**, 2989–3007.

Guichard, F., D. B. Parsons, J. Dudhia, and J. F. Bresch, 2003: Evaluating mesoscale model predictions and parameterizations against SGP ARM data over a seasonal time scale. *Mon. Wea. Rev.*, **131**, 926–944.

Hong, S.-Y., J. Dudhia, and S.-H. Chen, 2004: A revised approach to ice-microphysical processes for the bulk parameterization of cloud and precipitation. *Mon. Wea. Rev.*, **132**, 103–120.

Lynn, B. H., L. Druyan, C. Hogrefe, J. Dudhia, C. Rosenzweig, R. Goldberg, D. Rind, R. Healy, J. Rosenthal, P. Kinney, 2004: Sensitivity of present and future surface temperatures to precipitation characteristics *Climate Research*, **28(1)**, 53-65.

Lynn, B., A. Khain, J. Dudhia, D. Rosenfeld, A. Pokrovsky, and A. Seifert 2005: Spectral (bin) microphysics coupled with a mesoscale model (MM5). Part 1. Model description and first results. *Mon. Wea. Rev.*, **133**, 44–58.

Lynn, B., A. Khain, J. Dudhia, D. Rosenfeld, A. Pokrovsky, and A. Seifert 2004: Spectral (bin) microphysics coupled with a mesoscale model (MM5). Part 2: Simulation of a CaPe rain event with squall line. *Mon. Wea. Rev.*, **133**, 59–71.

**Nonrefereed Work** : 55 first-author papers

## **BIOGRAPHICAL SKETCH**

Jimmy Dudhia started research in the early 1980's working with Dr M. W. Moncrieff at Imperial College, London, on cloud-resolving simulations of tropical convection. He then continued tropical research with Prof. P. J. Webster at Penn State University and developed microphysical and cloud/radiation packages for the Penn State / NCAR Mesoscale Model (MM4), while also visiting NCAR to work with Dr. Moncrieff on mid-latitude supercell simulations. In the late 1980's and early 1990's, he developed a nonhydrostatic option for MM4, and moved to NCAR to work with Drs. Y.-H. Kuo, and G. Grell on the development of MM5. He has been in charge of model development and user support for MM5 since the mid-1990's, and continues to do research in numerical weather prediction, as well as being responsible for adding physics packages. This includes

a recent collaboration with Dr. F. Chen on a land-surface package. In the late 1990's he started working with Dr. J. B. Klemp, Dr. W. C. Skamarock, and Mr. J. G. Michalakes on a successor model called WRF. His main responsibilities in WRF are physics, collaborating with Dr. S.-H. Chen, and real-data capabilities collaborating with Mr. D. O. Gill. He has also recently developed a global version of MM5.