

Dr Mark Hibberd

Curriculum Vitae

Present Position

Principal Research Scientist, Healthy Atmosphere Stream,
The Living Atmosphere Theme
CSIRO Marine & Atmospheric Research
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Qualifications

1982 Ph.D. (Physics), Australian National University
1976 B.Sc. (Hons), Australian National University

Professional Affiliations & Related Activities

Clean Air Society of Australia and NZ, Victorian Branch, Council Member
NATA Approved Signatory, CSIRO Wind Tunnel Calibration Facility
Australian Meteorological and Oceanographic Society
Australian Institute of Physics
American Meteorological Society

Area of Expertise

Air pollution modelling including laboratory, field and computer studies of point source and urban air pollution.
Analysis and interpretation of large data sets
Uncertainty analyses
Anemometer calibration

Current Research

Development of modelling techniques for Air Pollution Modelling at smaller time scales (down to 1 minute) and space scales (< 100 m) than in current models.
Development of peak-to-mean ratio and other techniques for representing concentration fluctuations.

Research and Consultancies for

Alcoa Australia
Australian Aluminium Council
Civil Aviation Safety Authority (CASA)
Katestone Environmental
Kenelec Scientific
National Environment Protection Council (NEPC)
National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
NSW Department of Planning
NSW Health
Pasminco Port Pirie (Zinifex)
Phillips Oil
Roe 7 Alliance
VicRoads
WA Department of Environment
Western Power
Worsley Alumina

Selected Publications

- Hibberd, M. F. (2005). *Vehicle NO_x and PM₁₀ emission factors from Sydney's M5-East tunnel*. In: Towards a new agenda: 17th International Clean Air & Environment Conference proceedings, Hobart. Clean Air Society of Australia and New Zealand. 7 p.
- Hibberd, M. F. (2005). *Independent peer review of technical studies relating to exceedence of the air quality goals for the M5 East (Condition 73/4) on the 13th January 2005: final report / prepared for DIPNR (NSW Department of Infrastructure, Planning and Natural Resources) C/1119*. Aspendale, Vic.: CSIRO Marine and Atmospheric Research. 57 p.
- Van Dop, H., Van As, D., Van Herwijnen, A., Hibberd, M. F., and Jonker, H. (2005). Length scales of scalar diffusion in the convective boundary layer: laboratory observations. *Boundary-Layer Meteorology*, **116** (1): 1-35.
- Hibberd, M. F. (2004). *Ozone Data Analysis*. Report prepared for National Environment Protection Council. CSIRO Atmospheric Research, Aspendale, Vic. 32 p.
- Hibberd, M. F. (2003). Nocturnal dispersion meteorology in an urban valley. *Clean Air and Environmental Quality*, **37** (4): 34-37.
- Hibberd, M. F., Physick, W. L., and Park, G. (2003). *Verification of several aspects of TAPM against multi-year monitoring data at Collie*. In: National Clean Air Conference: linking air pollution science, policy and management: CASNO3, Newcastle City Hall. [Newcastle, NSW]: Clean Air Society of Australia and New Zealand. 6 p.
- Hibberd, M. F. (2002). *Tethersonde study in the Mullum Mullum Creek Valley: final report/ prepared for Vicroads Eastern Freeway Projects C/0570*. Aspendale: CSIRO Atmospheric Research. 88 p. + 1 CD-ROM.
- Hibberd, M. F. (2000). *Vertical dispersion of a passive scalar in the convective boundary layer: new laboratory results*. In: 11th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA.: preprints, Long Beach, Calif. Boston, Mass.: American Meteorological Society. p. 18-23.
- Hibberd, M. F. (2000). *Comparison of peak concentrations predicted by AUSPLUME, AUSPUFF and TAPM*. In: Proceedings of the 15th International Clean Air and Environment Conference, Sydney. Clean Air Society of Australia and New Zealand. p. 83-88.
- Luhar, A. K., Hibberd, M. F., and Borgas, M. S. (2000). A skewed meandering plume model for concentration statistics in the convective boundary layer. *Atmospheric Environment*, **34** (21): 3599-3616.
- Hibberd, M. F. (1998). Peak-to-mean ratios for isolated tall stacks (for averaging times from minutes to hours). In: Proceedings of the 14th International Clean Air and Environment Conference, Melbourne. Mitcham, Vic.: Clean Air Society of Australia and New Zealand. p. 255-260.
- Hibberd, M. F., Gilbert, A. J., Isaac, P. R., Noonan, J. A., Patterson, G. R., Rothwell, K. R., Scott, G. O., and Young, S. A. (1996). *Port Pirie Air Quality Investigations - relating emissions to impacts: final report to Pasminco Metals – BHAS, SB/1/248*. Aspendale, Vic.: CSIRO Division of Atmospheric Research, Environmental Consulting and Research Unit. 100 p.