

## REFERENCES

- Abramopoulos, F., C. Rosenzweig, and B. Choudhury, 1988: Improved ground hydrology calculation for global climate models (GCMs): soil water movement and evapotranspiration. *J. Climate*, **1**, 921-941.
- Anthes, R. A., Y. H. Kuo, E. Y. Hsie, S. Lownam, and T. W. Bettge, 1989: Estimation of skill and uncertainty in regional numerical models. *Quart. J. Roy. Meteor. Soc.*, **115**, 763-806.
- Bastable, H. G., W. J. Shuttleworth, R. G. Dallarosa, G. Fisch, and C. A. Nobre, 1993: Observations of climate, albedo, and surface radiation over cleared and undisturbed Amazonian forest. *Int. J. Climatol.*, **13**, 783-796.
- Bhaskaran, B., R. G. Jones, J. M. Murphy, and M. Noguer, 1996: Simulations of the Indian-summer monsoon using a nested regional climate model - domain size experiments. *Climate Dyn.*, **12**, 573-587.
- Boer, G. J., 1993: Climate change and the regulation of the surface moisture and energy budgets. *Climate Dyn.*, **8**, 225-239.
- Brown, S., 1993: Tropical forests and the global carbon-cycle - the need for sustainable land-use patterns. *Agriculture Ecosystems & Environment*, **46**, 31-44.
- Brubaker, K. L., D. Entekhabi, and P. S. Eagleson, 1993: Estimation of continental precipitation recycling. *J. Climate*, **6**, 1077-1089.
- Brutsaert, W., 1982: *Evaporation into The Atmosphere, Theory, History and Applications*. D. Reidel Publishing Company, Dordrecht.
- Byron, N., and G. Waugh, 1988: Forestry and fisheries in the Asian-Pacific Region: issues in natural resource management. *Asian Pacific Economic Literature*, **2**, 46-80.
- Callaham, R., and R. Buckman, 1981: Some Perspectives of Forestry in the Philippines, Indonesia and Thailand. US Department of Agriculture/Forest Service, Washington, DC.
- Carson, D. J., 1982: Current parameterizations of land surface processes in atmospheric general circulation models. In *Land Surface Processes in Atmospheric General Circulation Models*, Eagleson, P.S., ed., 67-108. Cambridge University Press, Cambridge.
- Caulfield, C., 1982: *Tropical Moist Forests*. Earthscan, London.
- Charney, J. G., 1975: Dynamics of deserts and drought in the Sahel. *Quart. J. Roy. Meteor. Soc.*, **101**, 193-202.
- Charney, J. G., W. J. Quirk, S. H. Chow, and J. Kornfield, 1977: A comparative study of the effects of albedo change on drought in semi-arid regions. *J. Atmos. Sci.*, **34**, 1366-1385.

- Charnock, H., 1955: Wind stress on a water surface. *Quart. J. Roy. Meteor. Soc.*, **81**, 639.
- Christensen, J. H., B. Machenhauer, R.G. Jones, C. Schar, P.M. Ruti, M. Castro, and G. Visconti, 1997: Validation of present-day regional climate simulations over Europe: LAM simulations with observed boundary conditions. *Climate Dyn.*, **13**, 489-506.
- Clapp, R. B., and G. M. Hornberger, 1978: Empirical equations for some soil hydraulic properties. *Water Resources Research*, **14**, 601-604.
- Corby, G. A., A. Gilchrist, and P. R. Rowntree, 1977: United Kingdom Meteorological Office five-level general circulation model. *Methods Comput. Phys.*, **17**, 67-110.
- Cullen, M. J. P., and T. Davies, 1991: A conservative split-explicit integration scheme with 4th-order horizontal advection. *Quart. J. Roy. Meteor. Soc.*, **117**, 993-1002.
- Cullen, M. J. P., 1993: The unified forecast/climate model. *Meteorological Magazine*, **122**, 81-94.
- Cullen, M. J. P., T. Davies, and M. H. Mawson, 1993: Conservative finite difference schemes for a Unified Forecast/Climate Model. *Unified Model Documentation Paper No. 10*. Meteorological Office, Bracknell.
- Delworth, T., and S. Manabe, 1989: The influence of soil wetness on near-surface atmospheric variability. *J. Climate*, **2**, 1447-1462.
- Dickinson, A., 1994: Atmosphere Formulation and Numerical Weather Prediction. *A report based on NWP Gazette Vol 1 article by Mike Longworth*. Meteorological Office, Bracknell.
- Dickinson, R. E., 1984: Modeling evapotranspiration for three-dimensional global climate models. In *Climate Processes and Climate Sensitivity*, Hansen, J. E., and T. Takahashi, eds., *Geophys. Monogr. Soc.*, **114**, 439-462.
- Dickinson, R. E., A. Henderson-Sellers, P. J. Kennedy, and M. F. Wilson, 1986: Biosphere-Atmosphere Transfer Scheme (BATS) for the NCAR Community Climate Model. *NCAR Tech. Note NCAR/TN-275+STR*, National Center for Atmospheric Research, Boulder, CO.
- Dickinson, R. E., 1987: Introduction to vegetation and climate interactions in the humid tropics. In *The Geophysiology of Amazonia*, Dickinson, R.E., ed., 3-10, John Wiley and Sons, Chichester.
- Dickinson, R. E., and A. Henderson-Sellers, 1988: Modeling tropical deforestation - a study of GCM land surface parametrizations. *Quart. J. Roy. Meteor. Soc.*, **114**, 439-462.
- Dickinson, R.E., R.M. Errico, F. Giorgi, and G.T. Bates, 1989: A regional climate model for the western United States. *Clim. Change*, **15**, 383-422.
- Dickinson, R.E., 1992: Land surface. In *Climate System Modeling*, Trenberth, K. E., ed., 149-171. Cambridge University Press, Cambridge.

- Dickinson, R. E., A. Henderson-Sellers, P.J. Kennedy, and F. Giorgi, 1993: Biosphere-Atmosphere Transfer Scheme (BATS) Version 1e As Coupled To The NCAR Community Climate Model. *NCAR Tech. Note NCAR/TN-387+STR*, National Center for Atmospheric Research, Boulder, CO.
- Dixon, R. K., J. K. Winjum, K. J. Andrasko, J. J. Lee, and P.E. Schroeder, 1994: Carbon pools and flux of global forest ecosystems. *Science*, **263**, 185-190.
- Dolman, A. J., and D. Gregory, 1992: The parametrization of rainfall interception in GCMs - reply. *Quart. J. Roy. Meteor. Soc.*, **120**, 735-736.
- Eagleson, P. S., 1970: *Dynamic Hydrology*. McGraw Hill, New York.
- Eagleson, P. S., 1978: Climate, soil and vegetation. *Water Resources Research*, **14**, 705-776.
- Eltahir, E. B., and R. L. Bras, 1993: On the response of the tropical atmosphere to large-scale deforestation. *Quart. J. Roy. Meteor. Soc.*, **119**, 779-793.
- Eltahir, E. B., 1996: Role of vegetation in sustaining large-scale atmospheric circulations in the tropics. *J. Geophys. Res.*, **101**, 4255-4268.
- Eltahir, E. B., and C. L. Gong, 1996: Dynamics of wet and dry years in West Africa. *J. Climate*, **9**, 1030-1042.
- Emanuel, K. A., 1995: On thermally direct circulations in moist atmospheres. *J. Atmos. Sci.* **52**, 1529-1534.
- Enquete-Kommission, 1995: Protecting Our Green Earth: How To Manage Global Warming Through Environmentally Sound Farming and Preservation of The World's Forests. *Third Report submitted by the 12th. German Bundestag's Enquete Commission "Protecting the Earth's Atmosphere"*, Economica-Verlag, Bonn.
- Entekhabi, D., and P. S. Eagleson, 1991: Climate and the equilibrium state of land surface hydrology parameterizations. *Surveys in Geophysics*, **12**, 205-220.
- Entekhabi, D., I. Rodrigueziturbe, and R.L. Bras, 1992: Variability in large-scale water-balance with land surface atmosphere interaction. *J. Climate*, **5**, 798-813.
- Fearnside, P. M., 1983: Development alternatives in the Brazilian Amazon: an ecological evaluation. *Interciencia*, **8**, 65-78.
- Fearnside, P. M., 1985: Environmental change and deforestation in the Brazilian Amazon. In *Change In the Amazon Basin: Man's Impact On Forests And Rivers*, Hemming, J., ed. University of Manchester Press, Manchester.
- Fearnside, P. M., 1987: Causes of deforestation in the Brazilian Amazon. In *The Geophysiology of Amazonia*, Dickinson, R.E., ed., 37-53. John Wiley and Sons, Chichester.
- Fleagle, R. G. and Businger, J. A., 1980: *An Introduction to Atmospheric Physics (2nd Edition)*. Academic Press, Inc., London.

- Food and Agriculture Organization of the United Nation, 1993: 1990 Forest Resources Assessment: Tropical Countries. Food and Agriculture Organization of the United Nations, Rome.
- Gadd, A. J., 1985: The 15-level weather prediction model. *Meteorological Magazine*, **114**, 222-226.
- Gash, J. H., and W. J. Shuttleworth, 1991: Tropical deforestation - albedo and the surface-energy balance. *Clim. Change*, **19**, 123-133.
- Giambelluca, T. W., L. T. Tran, A. D. Ziegler, T. P. Menard, and M. A. Nullet, 1996: Soil-vegetation-atmosphere processes - simulation and field measurement for deforested sites in northern Thailand. *J. Geophys. Res.* **101**, 25867-25885.
- Giambelluca, T. W., D. Holscher, T. X. Bastos, R. R. Frazao, M. A. Nullet, and A. D. Ziegler, 1997: Observations of albedo and radiation balance over postforest land surfaces in the eastern Amazon basin. *J. Climate*, **10**, 919-928.
- Giorgi, F., M.R. Marinucci, and G. Visconti, 1990: Use of a limited-area model nested in a general-circulation model for regional climate simulation over Europe. *J. Geophys. Res.*, **95**, 18413-18431.
- Giorgi, F., 1990: Simulation of regional climate using a limited area model nested in a general circulation model. *J. Climate*, **3**, 941-963.
- Giorgi, F., M. R. Marinucci, G. T. Bates, and G. Decanio, 1993: Development of a 2nd-generation regional climate model (RegCM2).2. convective processes and assimilation of lateral boundary- conditions. *Mon. Wea. Rev.*, **121**, 2814-2832.
- Gomez-Pompa, A., C. Vasquez-Yanes, and S. Guevara, 1972: The tropical rain forest: a non renewable resource. *Science*, **117**, 762-765.
- Grainger, A., 1993: *Controlling Tropical Deforestation*. Earthscan Publication Ltd., London.
- Gregory, D., and P. R. Rowntree, 1990: A mass flux convection scheme with representation of cloud ensemble characteristics and stability-dependent closure. *Mon. Wea. Rev.*, **118**, 1483-1506.
- Gregory, D., R. N. B. Smith, and P. M. Cox, 1994: Canopy, surface and soil hydrology. *Unified Model Documentation Paper No. 25*. Meteorological Office, Bracknell.
- Gregory, D., and P. Inness, 1996: Convection scheme. *Unified Model Documentation Paper No. 27*. Meteorological Office, Bracknell.
- Gutowski, W. J., D. S. Gutzler, and W. C. Wang, 1991: Surface-energy balances of 3 general-circulation models - implications for simulating regional climate change. *J. Climate*, **4**, 121-134.
- Halldin, S., B. Saugier, and F. Y. Pontailier, 1984: Evapotranspiration of a deciduous forest. Simulation using routine meteorological data. *J. Hydrol.*, **75**, 323-341.

- Hansen, J. E., G. Russell, D. Rind, P. Stone, A. A. Lacis, S. Lebedeff, R. Ruedy, and L. Travis, 1983: Efficient three dimensional global models for climate studies, Models I and II. *Mon. Wea. Rev.*, **111**, 609-662.
- Held, I. M., and A. Y. Hou, 1980: Nonlinear axially symmetric circulations in a nearly inviscid atmosphere. *J. Atmos. Sci.*, **37**, 515-533.
- Henderson-Sellers, A., and V. Gornitz, 1984: Possible climatic impacts of land cover transformations, with particular emphasis on tropical deforestation. *Clim. Change*, **6**, 231-257.
- Henderson-Sellers, A., 1987: Effect of change in land use on climate in the humid tropics. In *The Geophysiology of Amazonia*, Dickinson, R.E., ed., 463-493. John Wiley and Sons, Chichester.
- Henderson-Sellers, A., Z. L. Yang, and R. E. Dickinson, 1993: The project for intercomparison of land-surface parameterization schemes. *Bull. Amer. Meteor. Soc.*, **74**, 1335-1349.
- Henderson-Sellers, A., R.E. Dickinson, T.B. Durbidge, P.J. Kennedy, K. McGuffie, and A.J. Pitman, 1993: Tropical deforestation - modeling local-scale to regional-scale climate change. *J. Geophys. Res.*, **98**, 7289-7315.
- Houghton, J. T., Meira, Filho, Bruce, J., Hoesung, Lee, Callander, B. A., Haites, E., Harris, N., and Maskell, K., eds., 1994: *Climate Change 1994: Radiative Forcing of Climate Change and an Evaluation of the IPCC IS92 Emission Scenarios*. Cambridge University Press, Cambridge.
- Houghton, J. T., Meira, Filho, Callander, B. A., Harris, N., Kattenberg, A., and Maskell, K., eds., 1995: *Climate Change 1995: The Science of Climate Change*. Cambridge University Press, Cambridge.
- Houze, R. A., S. G. Geotis, F.D. Marks, and A. K. West, 1981: Winter monsoon convection in the vicinity of north Borneo.1. Structure and time variation of the clouds and precipitation. *Mon. Wea. Rev.*, **109**, 1595-1614.
- Hulme, M., 1992: A 1951-80 global land precipitation climatology for the evaluation of general-circulation models. *Climate Dyn.* **7**, 57-72.
- Ingram, W. J., S. Woodward, and J. Edwards, 1996: Radiation. *Unified Model Documentation Paper No. 23*. Meteorological Office, Bracknell.
- Ji, Y. M., and A. D. Vernekar, 1997: Simulation of the Asian summer monsoons of 1987 and 1988 with a regional model nested in a global GCM. *J. Climate*, **10**, 1965-1979.
- Jones, C. P., 1995: Specification of ancillary fields. *Unified Model Documentation Paper No. 70*. Meteorological Office, Bracknell.
- Jones, C. P., 1995: Specification of ancillary fields. *Unified Model Documentation Paper No. 70*. Meteorological Office, Bracknell.

- Jones, R. G., J.M. Murphy, M. Noguer, and A. B. Keen, 1997: Simulation of climate change over Europe using a nested regional- climate model.2. comparison of driving and regional model responses to a doubling of carbon dioxide. *Quart. J. Roy. Meteor. Soc.*, **123**, 265-292.
- Kalnay, E., M. Kanamitsu, R. Kistler, W. Collins, D. Deaven, L. Gandin, M. Iredell, S. Saha *et al.*, 1996: The NCEP/NCAR 40-year reanalysis project. *Bull. Amer. Meteor. Soc.*, **77**, 437-471.
- Kummer, D. M., and B. L. Turner, 1994: The human causes of deforestation in Southeast Asia. *Bioscience*, **44**, 323-328.
- Lanly, J. P., 1982: Tropical Forest Resources. *Food and Agriculture Organization of the United Nations (FAO) Paper No. 30*, Food and Agriculture Organization of the United Nations, Rome.
- Lean, J., and D. A. Warrilow, 1989: Simulation of the regional climatic impact of Amazon deforestation. *Nature*, **342**, 411-413.
- Lean, J., and P. R. Rowntree, 1993: A GCM simulation of the impact of Amazonian deforestation on climate using an improved canopy representation. *Quart. J. Roy. Meteor. Soc.*, **119**, 509-530.
- Lean, J., and P. R. Rowntree, 1997: Understanding the sensitivity of a GCM simulation of amazonian deforestation to the specification of vegetation and soil characteristics. *J. Climate*, **10**, 1216-1235.
- Legates, D. R., and C. J. Willmott, 1990a: Mean seasonal and spatial variability in gauge-corrected, global precipitation. *Int. J. Climatol.*, **10**, 111-127.
- Legates, D. R., and C. J. Willmott, 1990b: Mean seasonal and spatial variability in global surface air- temperature. *Theoretical And Applied Climatology*, **41**, 11-21.
- Legates, D. R., 1995: Global and terrestrial precipitation - a comparative-assessment of existing climatologies. *Int. J. Climatol.*, **15**, 237-258.
- Lettau, H., K. Lettau, and L. C. Molion, 1979: Amazonia's hydrologic cycle and the role of atmospheric recycling in assessing deforestation effects. *Mon. Wea. Rev.*, **107**, 227-238.
- Linden, E., 1998: Smoke signals: Vast forest fires have scarred the globe, but the worst may be yet to come. *Environment/Planet Watch*, **151**.
- Lindzen, R. S., and A. Y. Hou, 1988: Hadley circulations for zonally averaged heating centered off the equator. *J. Atmos. Sci.*, **45**, 2416-2427.
- Liu, Y. Q., F. Giorgi, and W. M. Washington, 1994: Simulation of summer monsoon climate over East Asia with an NCAR regional climate model. *Mon. Wea. Rev.*, **122**, 2331-2348.
- Lorenz, E. N., 1969: The predictability of a flow which possesses many scales of motion. *Tellus*, **3**, 289-307.

- Manabe, S., 1969: Climate and the ocean circulation: I. The atmospheric circulation and the hydrology of the earth's surface. *Mon. Wea. Rev.*, **97**, 739-774.
- McGuffie, K., A. Henderson-Sellers, H. Zhang, T. B. Durbridge, and A. J. Pitman, 1995: Global climate sensitivity to tropical deforestation. *Global Planet. Change*, **10**, 97-128.
- McGuffie, K. and Henderson-Sellers, A., 1997: *A Climate Modelling Primer (2nd Edition)*. John Wiley and Sons, Chichester.
- Meher-Homji, V. M., 1991: Probable impact of deforestation on hydrological processes. *Clim. Change*, **19**, 163-173.
- Mesinger, F., and A. Arakawa, 1976: Numerical methods used in atmospheric models. *GARP Publication Series No. 17, WMO/ICSU Joint Organising Committee*.
- Met. Office, 1996: Unified Model User Guide. *Document Version 1 - Unified Model Version 4.0*. Meteorological Office, Bracknell.
- Mintz, Y., 1982: The sensitivity of numerically simulated climates to land surface conditions. In *Land Surface Processes in Atmospheric General Circulation Models*, Eagleson, P.S., ed., 109-111. Cambridge University Press, Cambridge.
- Mintz, Y., 1984: The sensitivity of numerically simulated climates to land-surface conditions. In *The Global Climate*, Houghton, J.T., ed., 79-103. Cambridge University Press, Cambridge.
- Monteith, J. L., 1965: Evaporation and environment. *Symp. Soc. Exptl. Biol.*, **19**, 205-234.
- Monteith, J. L., 1976: *Vegetation and the Atmosphere*, 2. Academic Press, London.
- Murai, S., and Y. Honda, 1991: World vegetation map from NOAA GVI data. In *Applications of Remote Sensing in Asia and Oceania*, Murai, S., ed., Asian Association on Remote Sensing.
- Murdiyarmo, D., 1998: Transboundary haze pollution in Southeast Asia. *Impact*, **2**, 1 & 3 - 4.
- Myers, N., 1980: Conversion of Tropical Moist Forests: A Report Prepared for The Committee On Research Priorities in Tropical Biology of The National Research Council., National Academy of Sciences, Washington D.C.
- Myers, N., 1991: Tropical forests - present status and future outlook. *Clim. Change*, **19**, 3-32.
- Mylne, M. F., and P.R. Rowntree, 1992: Modeling the effects of albedo change associated with tropical deforestation. *Clim. Change*, **21**, 317-343.
- Nieuwolt, S., 1981: The climates of continental Southeast Asia. In *World Survey of Climatology Volume 9*, Takahashi, K., and H. Arakawa, eds., Elsevier, New York, 1-31.
- Nobre, C. A., P. J. Sellers, and J. Shukla, 1991: Amazonian deforestation and regional climate change. *J. Climate*, **4**, 957-988.

- Overland, J. E., 1985: Atmospheric boundary layer structure and drag coefficients over sea ice. *J. Geophys. Res.*, **90**, 9029-9049.
- Pahari, K., and S. Murai, 1997: Simulation of forest cover map for 2025 and beyond using remote sensing and GIS". In *Proceedings of 18<sup>th</sup> Asian Conference on Remote Sensing*, Anonymous, Kuala Lumpur, Malaysia.
- Paulson, C. A., 1970: Mathematical representation of wind speed and temperature profiles in the unstable atmospheric surface layer. *J. Appl. Meteor.*, **9**, 857-861.
- Pearce, D., and N. Myers, 1988: Economic values and the environment in Amazonia. In *The Future of Amazonia: Destruction of Sustainable Development?*, Goodman, G., and A. Hall, eds., Macmillan, London.
- Penman, H. L., 1948: Natural evaporation from open water, bare soil and grass. *Proceedings of the Royal Society of London, Series A*, **193**, 120-145.
- Phillips, N. A., 1957: A coordinate system having some special advantages for numerical forecasting. *J. Met.*, **14**, 184-185.
- Plumb, R. A., and A.Y. Hou, 1992: The response of a zonally symmetrical atmosphere to subtropical thermal forcing - threshold behavior. *J. Atmos. Sci.*, **49**, 1790-1799.
- Polcher, J., and K. Laval, 1994a: The impact of African and Amazonian deforestation on tropical climate. *J. Hydrol.*, **155**, 389-405.
- Polcher, J., and K. Laval, 1994b: A statistical study of the regional impact of deforestation on climate in the LMD GCM. *Climate Dyn.*, **10**, 205-219.
- Potter, G. L., H. W. Ellsaesser, M.C. MacCracken, and F.M. Luther, 1975: Possible climatic impact of tropical deforestation. *Nature*, **258**, 697-698.
- Potter, L., 1993: The onslaught on the forests in South-east Asia. In *South-East Asia's Environmental Future, the Search for Sustainability*, Brookfield, H., ed., United Nations University Press, Tokyo-New York-Paris.
- Ramanathan, V., and B. P. Briegleb, 1982: Spectral and diurnal variations in clear sky planetary albedo. *J. Appl. Meteor.*, **21**, 1160-1171.
- Ravindranath, N. H., and D. O. Hall, 1994: Indian forest conservation and tropical deforestation. *Ambio*, **23**, 521-523.
- Repetto, R. and Gillis, M., eds., 1988: *Public Policies and The Misuse of Forest Resources*. Cambridge University Press, Cambridge.
- Robinson, D. A., and G. Kukla, 1984: Albedo of dissipating snow cover. *J. Climate Appl. Meteor.*, **23**, 1626-1634.
- Robinson, D. A., and G. Kukla, 1985: Maximum surface albedo of seasonally snow-covered lands in the Northern Hemisphere. *J. Climate. Appl. Meteor.*, **24**, 402-411.



- Rutter, A. J., K. A. Kershaw, P. C. Robins, and A. J. Morton, 1971: A predictive model of rainfall interception in forests, 1. Derivation of the model from observations in a plantation of Corsican Pine. *Agric. Meteorol.*, **9**, 367-384.
- Salati, E., 1987: The forest and the hydrological cycle. In *The Geophysiology of Amazonia*, Dickinson, R. E., ed., 273-298. John Wiley and Sons, Chichester.
- Salati, E., and C. A. Nobre, 1991: Possible climatic impacts of tropical deforestation. *Clim. Change*, **19**, 177-196.
- Sedjo, R.A., and M. Clawson, 1983: How serious is tropical deforestation. *J. Forestry*, **81**, 792-794.
- Sellers, P. J., Y. Mintz, Y.C. Sud, and A. Dalcher, 1986: A simple biosphere model (SiB) for use within general- circulation models. *J. Atmos. Sci.*, **43**, 505-531.
- Sellers, P. J., 1987: Modelling effects of vegetation on climate. In *The Geophysiology of Amazonia*, Dickinson, R.E., ed., 297-339. John Wiley and Sons, Chichester.
- Sellers, P. J., 1991: Modelling and observing land-surface-atmosphere interactions on large scales. *Surveys in Geophysics*, **12**, 85-114.
- Sellers, P. J., 1992: Biophysical models of land surface processes. In *Climate System Modeling*, Trenberth, K.E., ed., 451-490. Cambridge University Press, Cambridge.
- Shukla, J., and Y. Mintz, 1982: Influence of land-surface evapo-transpiration on the earths climate. *Science*, **215**, 1498-1501.
- Shukla, J., C. A. Nobre, and P.J. Sellers, 1990: Amazon deforestation and climate change. *Science*, **247**, 1322-1325.
- Shuttleworth, W. J., 1988: Macrohydrology: the new challenge for process hydrology. *J. Hydrol.*, **100**, 31-56.
- Simmons, A. J., and D. M. Burridge, 1981: An energy and angular-momentum conserving vertical finite-difference scheme and hybrid vertical coordinates. *Mon. Wea. Rev.*, **109**, 758-766.
- Simmons, A. J., and L. Bengtsson, 1984: Atmospheric general circulation models: their design and use for climate studies. In *The Global Climate*, Houghton, J.T., ed., 37-62. Cambridge University Press, Cambridge.
- Sioli, H., 1980: Foreseeable consequences of actual development schemes and alternative ideas. In *Land People and Planning in Contemporary Amazonia*, Barbira-Scazzocchio, F., ed., Centre of Latin American Studies Occasional Paper No. 3, Cambridge University Press.
- Skole, D., and C. Tucker, 1993: Tropical deforestation and habitat fragmentation in the Amazon - satellite data from 1978 to 1988. *Science*, **260**, 1905-1910.

- Slingo, A., and R. C. Wilderspin, 1986: Development of a revised longwave radiation scheme for an atmospheric general-circulation model. *Quart. J. Roy. Meteor. Soc.*, **112**, 371-386.
- Slingo, A., 1989: A GCM parameterization for the shortwave radiative properties of water clouds. *J. Atmos. Sci.*, **46**, 1419-1427.
- Smagorinsky, J., 1982: Large-scale climate modelling and small-scale physical processes. In *Land Surface Processes in Atmospheric General Circulation Models*, Eagleson, P.S., ed., 3-17. Cambridge University Press, Cambridge.
- Smith, R. N., D. Gregory, J. F. Mitchell, and A. C. Bushell, 1995: Large-scale precipitation. *Unified Model Documentation Paper No. 26*. Meteorological Office, Bracknell.
- Smith, R. N. B., 1990: A scheme for predicting layer clouds and their water-content in a general-circulation model. *Quart. J. Roy. Meteor. Soc.*, **116**, 435-460.
- Smith, R. N. B., 1993: Subsurface, surface and boundary layer processes. *Unified Model Documentation Paper No. 24*. Meteorological Office, Bracknell.
- Smith, R. N. B., D. Gregory, and C. A. Wilson, 1994: Calculation of saturated specific humidity and large-scale cloud. *Unified Model Documentation Paper No. 29*. Meteorological Office, Bracknell.
- Southgate, D., 1990: The causes of land degradation along "spontaneously" expanding agricultural frontiers in the third world. *Land Economics*, **66**, 93-101.
- Southgate, D., and C. F. Runge, 1990: The Institutional Origins of deforestation In Latin America. *University of Minnesota Department of Agriculture and Applied Economics, Staff Paper No. P90-5*, University of Minnesota, St. Paul, MN.
- Sud, Y. C., and M. Fennessy, 1982: A study of the influence of surface albedo on July circulation in semi-arid regions using the GLAS GCM. *J. Climatol.*, **2**, 105-125.
- Sud, Y. C., and W. E. Smith, 1985a: Influence of local land-surface processes on the Indian monsoon - a numerical study. *J. Climate Appl. Meteor.*, **24**, 1015-1036.
- Sud, Y. C., and W. E. Smith, 1985b: The influence of surface-roughness of deserts on the July circulation (a numerical study). *Bound. Layer Meteor.*, **33**, 15-49.
- Sud, Y. C., G. K. Walker, J. H. Kim, G. E. Liston, P. J. Sellers, and W. K. Lau, 1996: Biogeophysical consequences of a tropical deforestation scenario: a GCM simulation study. *J. Climate*, **9**, 3225-3247.
- Sukanto, M., 1981: Climate of Indonesia. In *World Survey of Climatology*, Arakawa, H., ed., 215-229. Elsevier, New York.
- Swisher, J. N., and G. M. Masters, 1991: Buying environmental insurance - prospects for trading of global climate-protection services. *Clim. Change*, **19**, 233-240.

- Thompson, N., I. A. Barrie, and M. Ayles, 1981: The Meteorological Office Rainfall and Evaporation Calculation System: MORECS' Hydrological Memorandum No. 45., Meteorological Office, Bracknell.
- Thompson, P. D., 1961: *Numerical Weather Analysis and Prediction*. The MacMillan Company, New York.
- Trexler, M. C., and C. Haugen, 1995: Keeping It Green: Evaluating Tropical Forestry Strategies To Mitigate Global Warming., World Resources Institute, Washington D.C., USA.
- Turner, B. L., R. H. Moss, and D. L. Skole, eds., 1993: Relating Land Use And Global Land-cover Change: A Proposal For An IGBP-HDP Core Project. *International Geosphere-Biosphere Programme Report No. 24.*, *Human Dimension of Global Environmental Change Programme Report No. 5*, International Geosphere-Biosphere Programme and the Human Dimensions of Global Environmental Change Programme, Stockholm.
- Verseghy, D. L., 1991: Class-A Canadian land surface scheme for GCMs.1. soil model. *Int. J. Climatol.*, **11**, 111-133.
- Viner, D., and M. Hulme, 1997: The Climate Impacts LINK Project: Applying Results from the Hadley Centre's Climate Change Experiments for Climate Change Impacts Assessments. *Report prepared for UK Department of the Environment*, Climatic Research Unit, UEA, Norwich.
- Vonstorch, H., E. Zorita, and U. Cubasch, 1993: Downscaling of global climate-change estimates to regional scales - an application to Iberian rainfall in wintertime. *J. Climate*, **6**, 1161-1171.
- Warrilow, D. A., A. B. Sangster, and A. Slingo, 1986: Modelling of land surface processes and their influence on European climate. *Met O 20 DCTN 38*, Meteorological Office, Bracknell.
- Warrilow, D. A., and E. Buckley, 1989: The impact of land surface processes on the moisture budget of a climate model. *Annales Geophysicae-Atmospheres Hydrospheres And Space Sciences*, **7**, 439-449.
- Watson, R. T., Zinyowera, M. C., and Moss, R. H., eds., 1995: Climate Change 1995: Impacts, Adaptation and Mitigation of Climate Change: Scientific-Technical Analyses. Cambridge University Press, Cambridge.
- White, A. A., and R. A. Bromley, 1994: The Coriolis force in global atmospheric model: II. Dynamically consistent quasi-hydrostatic equations. *Forecasting Research Division Scientific Paper No. 24*, Meteorological Office, Bracknell.
- White, A. A., R. A. Bromley, and B.J. Hoskins, 1994: The Coriolis force in global atmospheric model: I. The Navier-Stoke equations and the hydrostatic primitive equations. *Forecasting Research Division Scientific Paper No. 23*, Meteorological Office, Bracknell.

- White, A. A., and R. A. Bromley, 1995: Dynamically consistent, quasi-hydrostatic equations for global-models with a complete representation of the coriolis-force. *Quart. J. Roy. Meteor. Soc.*, **121**, 399-418.
- Wilson, C. A., and R. Swinbank, 1991: Gravity wave drag. *Unified Model Documentation Paper No. 22*. Meteorological Office, Bracknell.
- Wilson, C. A., 1992: Vertical diffusion. *Unified Model Documentation Paper No. 21*. Meteorological Office, Bracknell.
- Wilson, M. F., and A. Henderson-Sellers, 1985: A global archive of land cover and soils data for use in general- circulation climate models. *J. Climatol.*, **5**, 119-143.
- Wright, I. R., Nobre, C. A., Tomasella, H. R., Da Rocha, H. R., Roberts, J. M., Vertamatti, E., Culf, A. D., Alvares, R. C., Hodnett, M. G., and Ubarana, V., 1996: Towards a GCM Surface Parametrization for Amazonia. In *Amazonian Deforestation and Climate*, 473-504. John Wiley and Sons, London
- Wright, I. R., J. C. Gash, H. R. Darocha, W. J. Shuttleworth, C. A. Nobre, G. T. Maitelli, C. P. Zamparoni, and P. A. Carvalho, 1992: Dry season micrometeorology of central amazonian ranchland. *Quart. J. Roy. Meteor. Soc.*, **118**, 1083-1099.
- Xue, Y., P. J. Sellers, J. L. Kinter, and J. Shukla, 1991: A simplified biosphere model for global climate studies. *J. Climate*, **4**, 345-364.
- Xue, Y. K., and J. Shukla, 1993: The influence of land surface properties on Sahel climate. 1. desertification. *J. Climate*, **6**, 2232-2245.
- Xue, Y. K., and J. Shukla, 1996: The influence of land surface properties on Sahel climate. 2. Afforestation. *J. Climate*, **9**, 3260-3275.
- Zhang, H., A. Henderson-Sellers, and K. McGuffie, 1996a: Impacts of tropical deforestation.1. Process analysis of local climatic-change. *J. Climate*, **9**, 1497-1517.
- Zhang, H., K. McGuffie, and A. Henderson-Sellers, 1996b: Impacts of tropical deforestation.2. The role of large-scale dynamics. *J. Climate*, **9**, 2498-2521.
- Zhang, Y., K. R. Sperber, and J. S. Boyle, 1997: Climatology and interannual variation of the East Asian winter monsoon: Results from the 1979-95 NCEP/NCAR reanalysis. *Mon. Wea. Rev.*, **125**, 2605-2619.
- Zheng, X.Y., and E. B. Eltahir, 1998: The role of vegetation in the dynamics of West African monsoons. *J. Climate*, **11**, 2078-2096.