

References

References

- Allen J.R.L., 1970. Physical processes of sedimentation. Unwin.
- Anderton R., Bridges P.H., Leeder M.R. and Sellwood B.W., 1979. A dynamic stratigraphy of the British Isles. George Allen & Unwin.
- Anthes R.A. and Warner T.T., 1978. Development of hydrodynamic models suitable for air pollution and other mesometeorological studies. *Monthly Weather Review* 106, 1045-1078.
- Arakawa A. and Suarez M.J., 1983. Vertical differencing of the primitive equations in sigma coordinates. *Monthly Weather Review* 111, 34-45.
- Arcement G.J. and Schneider V.R., 2003. Guide for selecting Manning's Roughness Coefficients for natural channels and flood plains. U.S. Geological Survey Water Supply Paper 2339. Denver, Colorado.
- Arnell, N.W., 2003. Relative effects of multi-decadal climatic variability and changes in the mean and variability of climate due to global warming: future streamflows in Britain. *Journal of Hydrology*, 270, (3-4), 195-213.
- Atkinson B.W. and Smithson P.A., 1972. An investigation into meso-scale precipitation distributions in a warm sector depression. *Quart J. R. Met. Soc.* 98, 353-368.
- Australian Government, 2008. Australian Natural Resources Atlas.
www.anra.gov.au/topics/coasts/processes/
- Avery B.W., 1980. Soil Classification for England and Wales (Higher Categories). Soil Survey Technical Monograph 14, Harpenden.
- Awissa F.T., 2003. Water flow in the peat bog at Waun y Griafolen. Unpublished MSc dissertation. University of Wales, Bangor.
- Bader M.J. and Roach W.T., 1977. Orographic rainfall in warm sectors of depressions. *Quart. J. Royal Meteorol. Soc.*, 103, 269-280.
- Barnes H.H., 1967. Guide for Selecting Manning's Roughness Coefficients for Natural Channels and Flood Plains. USGS Water-Supply Paper 1849.
- Barry R.G. and Chorley R.J., 1976. Atmosphere, weather and climate. Methuen.
- Barry R.G., 1992. Mountain weather and climate. Routledge.

- Barton J., 2002. Flooding: past, present and future - a case study of Dolgellau and the Mawddach Catchment. Unpublished MSc dissertation. University of Wales, Bangor.
- Bates P., Horritt M., Wilson M. and Hunter N., 2005. LISFLOOD-FP user manual and technical note. School of Geographical Sciences, University of Bristol.
- Bechtold, P., J.L. Redelsperger, I. Beau, M. Blackburn, S. Brinkop, J.Y. Grandpeix, A. Grant, D. Gregory, F. Guichard, C. Hoff, and E. Ioannidou, 2000: A GCS model intercomparison for a tropical squall line observed during TOGA-COARE. II: Intercomparison of single-column models and a cloud-resolving model. *Quart. J. Roy. Meteor. Soc.*, 126, 865-888.
- Beechie T.J., Liermann M., Pollock M.M., Baker S. and Davies J., 2006. Channel pattern and river-floodplain dynamics in forested mountain river systems. *Geomorphology* vol.78, Issues 1-2, Pages 124-141
- Beffa C. and Connell R.J., 2001. Two dimensional flood plain flow. I: Model description. *Journal of Hydrologic Engineering* 6(5), 397-405.
- Bellamy, D., 1985. *The Wild Boglands: Bellamy's Ireland*. Country House, Dublin.
- Benoit R., Desgagné M., Pellerin P., Pellerin S. and Chartier Y., 1997. The Canadian MC2: A Semi-Lagrangian, Semi-Implicit Wideband Atmospheric Model suited for finescale process studies and simulation. *Monthly Weather Review* vol.125, pp.2382-2415.
- Benoit R., Pellerin P., Kouwen N., Ritchie H., Donaldson N., Joe P. and Soulis E., 2000. Towards the use of coupled atmospheric and hydrologic models at regional scale. *Monthly Weather Review* 128, pp 1681-1706.
- Beven K.J., 1997. *Distributed hydrological modelling. Applications of the TOPMODEL concept*. Wiley.
- Beven K.J., 2001. *Rainfall-runoff modelling*. John Wiley, Chichester.
- Binnie and Partners, 1985. *Trawsfynydd pre-application studies*. Hydrology report. Central Electricity Generating Board.
- Bird S.B., Emmett B.A., Sinclair F.L., Stevens P.A., Reynolds B., Nicholson S. and Jones T., 2003. *Pontbren: Effects of tree planting on agricultural soils and their functions: final report*. Centre for Ecology and Hydrology, Bangor.
- Bjerknes, J. and Solberg H., 1922. Life cycle of cyclones and the polar front theory of atmospheric circulation. *Geophys. Publ.*, 3(1), 3-18.

- Boorman D.B., Hollis J.M. and Lilly A., 1995. Report No.126. Hydrology of soil types: a hydrologically-based classification of the soils of the United Kingdom. Institute of Hydrology.
- Bougeault P. and Mascart P., 2002. The Meso-NH Atmospheric Simulation System: Scientific Documentation. Météo France.
- Bowen D.Q., 1973. The Pleistocene history of Wales and the borderland. *Geological Journal* 8(2).
- Bragg O.M. and Tallis J.H., 2001. The sensitivity of peat-covered upland landscapes. *Catena* 42.
- Brigham Young University, 2004. Groundwater Modelling System Tutorials v1-2. Environmental Modelling Research Laboratory, Brigham Young University, Salt Lake City.
- British Geological Survey, 1971. Geological map of Great Britain: sheet 2. Ordnance Survey.
- British Geological Survey, 1982. Harlech sheet 135/149. Natural Environment Research Council.
- British Geological Survey, 1986. Bala sheet 136. Natural Environment Research Council.
- British Geological Survey, 1995. Cadair Idris sheet 149. Natural Environment Research Council.
- Browning K.A., 1980. Review lecture: local weather forecasting. *Proc. Royal Soc. London, Series A*, 371, 1745, 179-211.
- Browning K.A., Hardman M.E., Harrold T.W. and Pardoe C.W., 1973. The structure of rainbands within a mid-latitude depression. *Quart J. R. Met. Soc.* 99, 215-231.
- Browning K.A. and Hill F.F., 1985. Mesoscale analysis of a polar trough interacting with a polar front. *Quart. J. Royal Meteor. Soc.* 111, 445-462.
- Browning K.A., Hill F.F. and Pardoe C.W., 1974. Structure and mechanism of precipitation and the effect of orography in a wintertime warm sector. *Quart J. R. Met. Soc.* 100, 309-330.
- Browning K.A., Pardoe C.W. and Hill F.F., 1975. The nature of orographic rain at wintertime cold fronts. *Quart J. R. Met. Soc.* 101, 333-352.
- Burnham C.P., 1980. The soils of England and Wales. *Field Studies* 5.
- California Regional Weather Server, 2006. Archive of jet stream maps for the North Atlantic. http://squall.sfsu.edu/crws/archive/jet_atl_arch.html

- Calvert J., 2005. Lambert's Map: the Lambert conformal conic projection and how it illustrates the properties of analytic functions. University of Denver.
www.du.edu/~jcalvert/math/lambert.htm
- Calvert J., 2006. Open-Channel Flow. University of Denver.
www.du.edu/~jcalvert/tech/fluids/opench.htm
- Chalmers N. and Parker P., 1986. The OU Project Guide. Field Studies Council.
- Chambers F.M. and Price S.M., 1985. Palaeoecology of *Alnus* (Alder): Early Post-glacial rise in a valley mire, North-west Wales. *New Phytologist*, 101, pp.333-344.
- Chang F-J. and Chen Y-C., 2003. Estuary water-stage forecasting by using radial basis function neural network. *J. Hydrol.*, 270, 158-166.
- Chapman S.J., 2004. Fortran 90/95 for Scientists and Engineers. McGraw Hill.
- Chen G., Ning Z., Hou J., Xie S. and Deng A., 2007. Using WRF-ARW in Operational Forecasts. Proceedings of the 8th WRF Users' Workshop, NCAR, Boulder, Colorado.
- Chen S.-H. and Lin Y.-L., 2003. Parameters controlling precipitation associated with a conditionally unsaturated, unstable flow over a two-dimensional mesoscale mountain. 4th MM5/WRF Workshop. U.S. National Centre for Atmospheric Research. Boulder, Colorado.
- Clark M. and Small J., 1982. Slopes and weathering. Cambridge University Press.
- Clymo R.S., 1973. The growth of *Sphagnum*: Some effects of environment. *Journal of Ecology* 61 pp. 849–869.
- Colle B.A., 2006. Two-dimensional idealized simulations of the impact of multiple windward ridges on orographic precipitation. Proc. 12th Conference on Mountain Meteorology, Santa Fe, New Mexico.
- Cornell University, 2003. SMDR, the Soil Moisture Distribution and Routing Model. Soil and Water Laboratory, Biological and Environmental Engineering Department, Cornell University, Ithaca, USA.
- Coultard T., 1999. Modelling upland catchment response to Holocene environmental change. PhD thesis, University of Leeds.
- Cranfield University, 2004. The National Soil Map and Soil Classification. Cranfield University.

- Cranston M., Kitchen M. and Flint T., 2003. Benefits of using weather radar for flood warning in Scotland. Proceedings of the Royal Meteorological Society 'Floods in Scotland' seminar, Perth, 2003.
- Cui J. and Neary V.S., 2002. Large eddy simulation of fully developed flow through vegetation. Proc. 5th Int. Conf. on Hydroinformatics, Cardiff.
- Daultrey S., 1996. The influences of the North Atlantic Oscillation, the El Niño/Southern Oscillation and the Quasi-biennial Oscillation on winter precipitation in Ireland, in *Regional Response to Climate Change*, J.A.A.Jones et al.(eds.). Kluwer.
- Dawdy D.R. and O'Donnell T., 1965. Mathematical models of catchment behaviour. Journal of the Hydraulics Division, American Society of Civil Engineers 91, HY4.
- Demuth H. and Beale M., 2000. Neural network toolbox for use with MATLAB. User's guide: Version 4. MathWorks Inc.
- Deng A., Zielonka J.R., Hunter G.K. and Stauffer D.R., 2007. A Comparison of High-Resolution Mesoscale Simulations using MM5 And WRF-ARW for the 2006 Winter Olympics. Proceedings of the 8th WRF/ MM5 Users' Workshop, NCAR, Boulder, Colorado.
- Dixon C., 2002. Flash Flood. 3/7/01. www.konsk.co.uk/resource/flood.htm
- Donnell B.P. et al., 1997. Users Guide to RMA2 WES Version 4.3. US Army Corps of Engineers – Waterways Experiment Station Hydraulics Laboratory.
- Dudhia J., Gill D., Manning K., Wang W. and Bruyere C., 2005. PSU/NCAR mesoscale modelling system. Tutorial class notes and user's guide: MM5 modelling system version 3. National Center for Atmospheric Research, Boulder, Colorado, USA.
- Dundee Satellite Receiving Station, 2005. AVHRR and MODIS images. www.sat.dundee.ac.uk
- Edgell M.C.R., 1969. Vegetation of an upland ecosystem: Cader Idris, Merionethshire. *Journal of Ecology* 57, 335-359.
- Edwards K.J. and Whittington G., 2001. Lake sediments, erosion and landscape change during the Holocene in Britain and Ireland. *Catena* 42 pp.143-173.
- Ellis T.P., 1928. The story of two parishes. Dolgelley and Llanelltyd. The Welsh Outlook Press, Newtown. Reproduced at: www.rootsweb.com

- Environment Agency Wales, 1999. Local environment agency plan: Meirionnydd consultation report. Environment Agency Wales, Bangor.
- Evans M.S., Keyser D., Bosart L.F. and Lackmann G.M., 1994. A satellite-derived classification scheme for rapid maritime cyclogenesis. *Monthly Weather Rev.* 122, 1381-1416.
- Fischer-Antze T., Stoesser T., Bates P. and Olsen N.R.B. , 2001. 3D numerical modelling of open-channel flow with submerged vegetation. *Journal of Hydraulic Research* vol.39 pp303-310.
- Fletcher C.A.J., 1991. *Computational techniques for fluid dynamics. Volume 1. Fundamental and general techniques.* Springer-Verlag.
- Forestry Commission, 1994. *The management of semi-natural woodlands: 8. Wet woodlands.* Forestry Commission, Edinburgh.
- Forestry Commission, 2000. *Forests and Water: Guidelines.* Forestry Commission.
- Foster H.D., 1968. *The glaciation of the Harlech Dome.* PhD thesis, University of London.
- Fovell R.G. and Tan P.-H., 1998. Multicellular storms and new cell generation. The temporal behaviour of numerically simulated multicell-type storms. Part II: The convective life cycle and cell regeneration. *Monthly Weather Review*, 126, 551.
- Fovell R.G. and Tan P.-H., 2000. Multicellular behaviour in a simplified aquall-line model. *Q. J. Royal Met. Soc.*, 126, 173-188.
- French H.M., 1976. *The Periglacial Environment.* Longman, London.
- Galvin J. and Owens R., 2006. Mountain waves over the UK. *Weather*, 61, p254.
- Garvert M., Colle B.A. and Mass C.F., 2005. The 13-14 December IMPROVE event: Part 1, Synoptic and mesoscale comparison of the observed structures with a mesoscale model simulation. *J. Atmos. Sci.*, 62, 3474-3492.
- Geological Survey, 1971. *Geological Map of Great Britain, sheet 2 England and Wales.* Geological Survey.
- Gilbey J., 1968. *The mineralogy, paragenesis and structure of the ores of the Dolgellau gold belt, Merioneth.* Ph.D. thesis, Kings College, London.
- Gochis D.J., Yates D.N., Yu W. and Chen F., 2007. Development of a prototype flash-flood prediction system for the Colorado Front Range using the coupled WRF/Noah – Distributed Hydrometeorological Prediction System. *Proceedings of the 8th WRF Users' Workshop, NCAR, Boulder, Colorado.*

- Goldman D. and Ely P., 1990. HEC-1 Flood hydrograph package user's manual. Hydrologic Engineering Centre, U.S. Army Corps of Engineers, Davis, California..
- Grell G.A., Dudhia J. and Stauffer D.R., 1995. A description of the Fifth-generation Penn State/NCAR Mesoscale Model (MM5). NCAR Technical Note TN-398 + STR. National Center for Atmospheric Research, Boulder, Colorado.
- Ha J.-C., Lee Y.-H., Chang D.-E., Lee H.-C. and Lee H.-S., 2007. Comparison of Precipitation Forecasts from MM5, WRF-ARW and WRF-NMM over the Korean Peninsula during Summer Season. Proceedings of the 8th WRF Users' Workshop, NCAR, Boulder, Colorado.
- Hall G., 1981. Igneous processes in the Welsh Basin. Open University Geological Society J., 3(1), 1-13.
- Hall G. and Cratchley, R., 2006. Sediment erosion, transport and deposition during the July 2001 Mawddach extreme flood event, in Rowan, J.S et al.(eds) Sediment Dynamics and the Hydromorphology of Fluvial Systems. International Association of Hydrological Sciences.
- Hall G., Cratchley R. and Johnson S., 2006. Integrated meteorological/hydrological modelling of the Mawddach river catchment, North Wales. Proc. British Applied Mathematics Colloquium, Keele.
- Hambley M., Bodlander A. and Southern D., 1991. Railways of the Wnion valley and the Mawddach estuary. Llangollen Railway Society.
- Harris, A., Bryant, R. G. and Baird, A. J. , 2006. Mapping the effects of water stress on Sphagnum: Preliminary observations using airborne remote sensing. *Remote Sensing of Environment*, 100, (3), 363-378.
- Harrold T.W., 1973. Mechanisms influencing the distribution of precipitation within baroclinic disturbances. Quart. J. R. Met. Soc. 99, pp 232-251.
- Hartley L.J., 1998. NAPSAC (Release 4.1) Technical Summary Document. Atomic Energy Authority, Harwell Laboratory, Oxfordshire.
- Hawkins T.R.W., 1980. Geology of Gwynedd: a review with geotechnical implications. Middlesex Polytechnic.
- Hayakawa Y.S. and Oguchi T., 2006. DEM-based identification of fluvial knickzones and its application to Japanese mountain rivers. *Geomorphology* vol.78, Issues 1-2, pp.90-106

- Heathcote J.A., Lewis R.T. and Soley R.W.N., 2004. Rainfall routing to runoff and recharge for regional groundwater resource models. *Q. J. Engineering Geology and Hydrogeology*, 37, 113-130.
- Hibbard W. and Kellum J., 2005. Vis5D Documentation.
<http://vis5d.sourceforge.net/doc>
- Hill F.F., Browning K.A. and Bader M.J., 1981. Radar and raingauge observations of orographic rain over South Wales, *Q.J. Royal Met.Soc.*, 107, 643-670.
- Holden J. and Burt T.P., 2003a. Hydraulic conductivity in upland blanket peat: measurement and variability. *Hydrological processes*, 17, 1227-1237.
- Holden J. and Burt T.P., 2003b. Runoff production in blanket peat covered catchments. *Water Resources Research*, 39(7).
- Holland L., Gotway J.H., Brown B. and Bullock R., 2007. A Toolkit for Model Evaluation. Proceedings of the 8th WRF/ MM5 Users' Workshop, NCAR, Boulder, Colorado.
- Horritt M.S. and Bates P.D., 2002. Evaluation of 1D and 2D numerical models for predicting river flood inundation. *Journal of Hydrology* 268, 87-99.
- Howe G.M. and Thomas P., 1968. Welsh landforms and scenery. Macmillan.
- Howells M.F., Francis E.H., Leveridge B.E. and Evans C.D.R., 1978. Classical areas of British geology. Capel Curig and Betws-y-Coed. Institute of Geological Sciences.
- Ince J., 1983. Two postglacial pollen profiles from the uplands of Snowdonia, Gwynedd, North Wales. *New Phytol.* 95, 159-172.
- Ingram H.A.P., 1967. Problems of hydrology and plant distribution in mires. *Journal of Ecology* 55, 711-724.
- Ingram H.A.P., Rycroft D.W. and Williams D.J.A., 1974. Anomalous transmission of water through certain peats. *J.Hydrology* vol.22 pp.213-218.
- Institute of Hydrology, 1988. HYRRROM Users' Manual.
- Institute of Hydrology, 1990. Report No. 109. Plynlimon research: The first two decades. Natural Environment Research Council.
- Jacobson M.Z., 1999. Fundamentals of Atmospheric Modelling. Cambridge University Press.
- JBA Consulting, 2004. Report T112. Impact of scour and flood risk on railway structures. Rail Safety and Standards Board.

- Jenkins D., 2003. Trees and flooding – field observations of recent plantings on improved grassland. Institute of Chartered Foresters News issue 1/2003.
- Joint Nature Conservation Committee, 2005. Migneint-Arenig-Dduallt site details. www.jncc.gov.uk/ProtectedSites/SACselection/sac.asp
- Jones J.A.A., Mountain N.C., Pilling C.G. and Holt C.P., 2007. Implications of climate change for river regimes in Wales – a comparison of scenarios and models. In J-P Lobo Ferreira and J.M.P. Vieira (eds) *Water in Celtic countries: quantity, quality and climatic variability*, International Association of Hydrological Sciences Publication 310, 71-77.
- King I. et al., 1997. Users guide to RMA2-WES version 4.3. U.S. Army Corps of Engineers – Waterways Experiment Station Hydraulics Laboratory.
- Kirkby M.J., 1978. Hillslope Hydrology. John Wiley, Chichester.
- Kirkby M.J., 1997. TOPMODEL: a personal view. In: Beven K.J.(ed.) *Distributed hydrological modelling. Applications of the TOPMODEL concept*. Wiley.
- Kokelaar, B.P., 1977. The igneous history of the Rhobell Fawr area, Merioneth. Ph.D. thesis, University of Wales, Aberystwyth.
- Kumar C.P. and Purandara B.K., 2003. Modelling of soil moisture movement in a watershed using SWIM. Institute of Engineering (India) Journal of Agricultural Engineering, 84.
- Kuo, H., and W. Raymond, 1980. A Quasi-one-Dimensional Cumulus Cloud Model and Parameterization of Cumulus Heating and Mixing Effects. *Mon. Wea. Rev.*, **108**, 991–1009.
- Lal, Wasantha, A.M., 1999. A weighted implicit finite volume model for overland flow. South Florida Water Management District. West Palm Beach, Florida.
- Langhoff J.H., Rasmussen K.R. and Christensen S., 2006. Quantification and regionalization of groundwater-surface water interaction along an alluvial stream. *Journal of Hydrology* 320, pp. 342-358.
- Lee K.T. and Chang C.-H., 2005. Incorporating subsurface-flow mechanism into geomorphology-based IUH modeling. *Journal of Hydrology*.
- Letter J.V. et al., 1998. Users guide to SED2D-WES, a generalized computer program for two-dimensional vertically averaged sediment transport. U.S. Army Corps of Engineers – Waterways Experiment Station Hydraulics Laboratory.
- Lin Y., Colle B.A. and Novak D.R., 2005. Comparison of the Real-Time MM5 and WRF over the Northeastern United States. Proceedings of the 6th WRF/ MM5 Users' Workshop, NCAR, Boulder, Colorado.

- Linsley R.K., Kohler M.A. and Paulhus J.L.H., 1988. Hydrology for Engineers. McGraw Hill.
- Lloyd C.D., 2005. Assessing the effect of integrating elevation data into estimation of monthly precipitation in Great Britain. *Journal of Hydrology*, 308, pp 128-150.
- McDonald M.G. and Harbaugh A.W., 1988. A modular three-dimensional finite-difference groundwater flow model. U.S. Geological Survey. Denver, Colorado.
- McLusky D.S., 1971. *Ecology of Estuaries*. Heinemann.
- MacWilliams M.L., Street R.L. and Kitanidis P.K., 2004. Modelling floodplain flow on Lower Deer Creek, CA. Proc. 2nd Int. Conf. on Fluvial Hydraulics, Balkema.
- Marshall M.R., Frogbrook Z.L., Francis O.J., Reynolds B., McIntyre N. and Wheeler H.S., 2006, The impact of upland land management on flooding: preliminary results from a multi-scale experimental programme. Proc. BHS 9th National Hydrology Symposium, Durham. pp 85-90.
- Martin J.E., 2006. *Mid-Latitude Atmospheric Dynamics*. Wiley.
- Mason J., 2002. The July 2001 thunderstorms and their catastrophic effects in Mid-Wales. www.geologywales.co.uk/storms
- Mason, J., 2006. What goes on aloft? A rough guide to the upper air. www.geologywales.co.uk/storms/upthere.htm
- Matley A.C. and Wilson T.S., 1946. The Harlech Dome north of the Barmouth Estuary. *Quarterly Journal of the Geological Society, London*. 102.
- Mew G. and Ball D.F., 1972. Grid Sampling and Air Photography in Upland Soil Mapping. *Geographical Journal* v.138 no.1 pp.8-14.
- Miller A.A., 1946. Some physical features related to the river development in the Dolgelly district. *Proc. Geological Association*, 57, pp 174-203.
- Mitsch W.J. and Gosselink J.G., 2000. *Wetlands*. Chapter 5: Wetland hydrology. John Wiley.
- Molinas A. and Yang C.T., 1985. Generalized water surface profile computation. *ASCE Journal of Hydraulic Engineering*. 111, 3
- Montero P., Gomez-Gesteira M., Taboada J.J., Ruiz-Villarreal M., Santos A.P., Neves R.R., Prego R. and Perez-Villar V., 1999. On residual circulation of the Ria of Vigo, using a 3-D baroclinic model. *Boletín Instituto Español de Oceanografía*, 15(1-4) 31-38.

- Montgomery D.R. and Buffington J.M., 1997. Channel-reach Morphology in Mountain Drainage Basins. *Geological Society of America Bulletin*, 109(5), 596-611.
- Moore R.J., Jones A.E., Jones D.A., Black K.B. and Bell V.A., 2004. Weather radar for flood forecasting: some UK experiences. *Proc. 6th International Symposium on Hydrological Applications of Weather Radar*. Melbourne, Australia.
- Morrison T.A., 1975. *Goldmining in Western Merioneth*. Llandysul.
- National Centre for Atmospheric Research, 2005. *PSU/NCAR Mesoscale Modelling System Tutorial Class Notes and User's Guide: MM5 Modelling System Version 3*. NCAR, Boulder, Colorado.
- National Weather Service, 2005. Structure and evolution of a quall line and bow echo convective systems. www.crh.noaa.gov/lmk/soo/docu/bowecho.htm.
- Nemes A., Wösten, J.H.M. and Lilly A., 2001. Development of soil hydraulic pedotransfer functions on a European scale: their usefulness in the assessment of soil quality. *Proc. 10th International Soil Conservation Organisation meeting*, Purdue University.
- Nisbet T., 2003. Opportunity mapping for trees and floods. *Institute of Chartered Foresters News issue 1/2003*.
- Nortcliff S. and Thornes J.B., 1988. The dynamics of a tropical floodplain environment with reference to forest ecology. *Journal of Biogeography* v.15 pp.49-59.
- Novak D.R. and Colle B.A., 2005. Comparison of MM5 and WRF Forecasts of the 25 December 2002 Northeast U.S. Banded Snowstorm. *Proceedings of the 6th WRF/MM5 Users' Workshop*, NCAR, Boulder, Colorado.
- O'Connell J., 2004. *Assessing the Potential of Floodplain Woodland in Flood Amelioration*. Unpublished MSc dissertation. University of Wales, Bangor.
- OFWAT, 2008. *Sustainable development - domestic water consumption*. www.sustainable-development.gov.uk/regional/summaries/16.htm
- Olaya V., 2004. *A gentle introduction to SAGA GIS*. Göttingen University, Germany
- Open University, 1984. *Course MST322: Mathematical Methods and Fluid Mechanics*. Unit 4: vector field theory. Open University Press.
- ___ 1984. *Course MST322: Mathematical Methods and Fluid Mechanics*. Unit 5: kinematics of fluids. Open University Press.

- ___ 1984. Course MST322: Mathematical Methods and Fluid Mechanics. Unit 6: Bernoulli's equation. Open University Press.
- ___ 1984. Course MST322: Mathematical Methods and Fluid Mechanics. Unit 8: The flow of a viscous fluid. Open University Press.
- Open University, 1992. Course M372: Numerical methods for differential equations. Block 1 Unit 2: Numerical linear algebra. Open University.
- ___ 1992. Course M372: Numerical methods for differential equations. Block 1 Unit 4: Numerical integration. Open University.
- ___ 1992. Course M372: Numerical methods for differential equations. Block 4 Unit 1: The finite element method: one-dimensional problems. Open University.
- ___ 1992. Course M372: Numerical methods for differential equations. Block 4 Unit 2: The finite element method: elliptic problems. Open University.
- Open University, 1995. Course S268: Physical resources and environment. Block 3: Water resources. Open University Press.
- Pears N., 1977. Basic Biogeography. Longmans.
- Peterken G.F. and Hughes F.M.R., 1995. Restoration of floodplain forests in Britain. *Forestry*, 68(3), 187-202.
- Pethick J., 1980. River channel forms. *Journal of the Geology Teachers' Association*. Press W.H., Teukolsky S.A., Vetterling W.T. and Flannery B.P., 1992. *Numerical Recipes in C*. Cambridge University Press.
- Price R.J., 1973. *Glacial and fluvioglacial landforms*. Oliver and Boyd.
- Proudman Oceanographic Laboratory, 2006. Tidal predictions for selected UK and Irish ports. <http://www.pol.ac.uk/ntslf/tides/>
- Raupach M.R. and Finnigan J.J., 1997. The influence of topography on meteorological variables and surface-atmosphere interactions. *Journal of Hydrology* 190, 182-213.
- Redelsperger, J. L., P.R.A. Brown, F. Guichard, C. Hoff, M. Kawasima, S. Lang, Th. Montmerle, K. Nakamura, K. Saito, C. Seman, W.K. Tao, and L.J. Donner., 2000: A GCS model intercomparison for a tropical squall line observed during TOGA-COARE. I: Cloud-resolving models. *Quart. J. Roy. Meteor.Soc.*,126, 823-864.
- Reeve A.S., Siegel D.I. and Glaser P.H., 2000. Simulating vertical flow in large peatlands. *Journal of Hydrology* 227, 207-217.

- Refsgaard J.-C. and Storm B., 1995. MIKE SHE. In Singh V.P. (ed.) Computer models of watershed hydrology. Water Resource Publications, Highlands Park, Colorado. 809-846.
- Rhydderch A., 1976. Dolgellau. Gwynedd County Council Archives Service.
- Rice R. and Sharp G.J., 1976. Copper mineralisation in the forest of Coed y brenin, North Wales. *Trans.Inst. Min. Metall.*, 85, B1-B14.
- Richter D.A. and Dahl R.A., 1958. Relationship of heavy precipitation to the jet maximum in the eastern United States, September 19-21, 1958. *Monthly Weather Review* 86, 368-76.
- Ridgway, J., 1975. The stratigraphy of Ordovician volcanic rocks on the southern and eastern flanks of the Harlech dome, Merioneth. *Geological Journal*, 11,121-136.
- Richards K., 1982. *Rivers: form and process in alluvial channels*. Methuen.
- Rodwell J.S. (ed.), 1991. *British Plant Communities Volume 1 - Woodlands and scrub*. Cambridge University Press.
1991. *British Plant Communities Volume 2 - Mires and heaths*. Cambridge University Press.
1992. *British Plant Communities Volume 3 - Grasslands and montane communities*. Cambridge University Press.
1995. *British Plant Communities Volume 4 - Aquatic communities, swamps and tall-herb fens*. Cambridge University Press.
2000. *British Plant Communities Volume 5 - Maritime communities and vegetation of open habitats*. Cambridge University Press.
- Rushton A.W.A., 1974. The Cambrian of Wales and England. In Holland C.H.(ed) *Lower Palaeozoic rocks of the World, vo.2 – Cambrian of the British Isles, Norden and Spitsbergen*. Wiley.
- Rosby C.G. and Willett H.C., 1948. The circulation of the upper troposphere and lower stratosphere. *Science*, 108, 643-652.
- Sallery D., 2005. The Conwy Valley Line. www.penmorfa.com/Conwy/
- Scamarock W.C., Klemp J.B., Dudhia J., Gill D.O., Barker D.M., Wang W. and Power J.G., 2007. A description of the Advanced Research WRF Version 2. NCAR Technical Note 468. National Center for Atmospheric Research, Boulder, Colorado.

- Schneidereit M. and Schär C., 2000. Idealised numerical experiments of Alpine flow regimes and southside precipitation events. *Meteorology and Atmospheric Physics*, 72, 233-250.
- Schramkowski G.P. and De Swart H.E., 2002. Morphodynamic equilibrium in straight tidal channels: combined effects of Coriolis force and external overtides. *J. Geophysical Research* v. 107, pp. 20.1 – 20.17.
- Schultz D.M., Keyser D. and Bosart L.F., 1998. The effect of large-scale flow on low-level frontal structures and evolution in midlatitude cyclones. *Monthly Weather Review*, 126, 1767-1791.
- Schultz D.M. and Wernli H., 2001. Determining Midlatitude Cyclone Structure and Evolution from the Upper-Level Flow. NOAA/National Severe Storms Laboratory, Norman, OK
- SciLab, 2007. SciLab: the open source platform for numerical computation. www.scilab.org/
- Shapiro M.A. and Keyser D., 1990. Fronts, jet streams and the tropopause. *Extratropical Cyclones: The Erik Palmén Memorial Volume*. C.W.Newton and E.O.Holopainen, Eds., American Meteorol. Soc. 167-191.
- Sheridan P.F. et al., 2006. Observations of lee waves and rotors downwind of the Pennines. *Proc. 12th Conference on Mountain Meteorology*, Santa Fe, New Mexico.
- Short N., 2006. Remote sensing tutorial. National Aeronautics and Space Administration. rst.gsfc.nasa.gov/
- Sibley, A. (2005) Analysis of the heavy orographic rainfall over North Wales, 3 and 4 February 2004. *Weather*, 60, 2
- Silliman S.E. and Booth D.F., 1993. Analysis of time series measurements of sediment temperature for identification of gaining versus losing portions of Juday Creek, Indiana. *Journal of Hydrology*, 146 pp.131-148.
- Skaugen T. et al., 2003. Scenarios of extreme daily precipitation for Norway under climate change. *Nordic Hydrology*, v35, no1.
- Smith A.A., 2007. MIDUSS Version 2 Reference Manual. Chapter 8: Hydraulic Theory. Dundas, Ontario.
- Smith S., 2003. A Hydrological Study of a Sub-Catchment of the Afon Wnion: Pared yr Ychain. Unpublished MSc dissertation, University of Wales, Bangor.

- Sobehrad S., 1997. Mixing Modes of Fresh and Salt Water In the Estuarine Environment. Texas A&E University. bellnetweb.brc.tamus.edu/mixing.htm
- Sood A., 2006. A Multiple Path Distributed Flow Algorithm for Surface Flow and Upslope Area -- A Case Study For Greenland. www.awi-bremerhaven.de/ATM/asood/route.html
- South Florida Water Management District, 2005. Lower Kissimmee Basin Groundwater Model. SFWMD.
- Steffler P. and Blackburn J., 2002. River2D – Introduction to Depth Averaged Modelling and User’s Manual. University of Alberta.
- Stoelinga M.T., 2003. A user’s guide to RIP version 4: a program for visualising Mesoscale Model output. www.mmm.ucar.edu/mm5/documents/ripug_V4.html.
- Svensson U., 2001. A continuum representation of fracture networks. Part 1: Method and basic test cases. *J. Hydrology* 250, 170-186.
- Svensson U., 2001. A continuum representation of fracture networks. Part 2: Application to the Äspö Hard Rock laboratory. *J. Hydrology* 250, 187-205.
- Svensson U., 2004. Modelling flow and transport in a sparsely fractured granite – Some working concepts and assumptions. Proceedings of the 4th IMA conference on Modelling Permeable Rocks. Southampton.
- Takemi T., 2006. A sensitivity of squall-line structure and intensity to environmental stability and shear. Proceedings of the 7th WRF Users’ Workshop, NCAR, Boulder, Colorado.
- Thomas H. and Nisbet T.T., 2004. An assessment of the hydraulic impact of floodplain woodland. Final Report to the Forestry Commission.
- Thorncroft C.D., Hoskins B.J. and McIntyre M.E., 1993. Two paradigms of baroclinic-wave life-cycle behaviour. *Quart. J. Royal Meteorol. Soc.* 119, 17-55.
- Tilford K. and Sene K., 2003. Flood forecasting model selection – a new approach: an example case study, Kilmarnock. Proceedings of the Royal Meteorological Society ‘Floods in Scotland’ seminar, Perth, 2003.
- Tilley J.S., Paulsen C.M. and Askelson M.A., 2005. Intercomparison of Forecasts from Very-High Resolution MM5 and WRF Physics-Based Ensembles: The Dryline/Pacific Frontal Merger during Storm-Fest IOP 17. Proceedings of the 6th WRF/ MM5 Users’ Workshop, NCAR, Boulder, Colorado.
- Todd D.K., 1980. Groundwater Hydrology. John Wiley.

- Uhlenbrook S., Roser S. and Tilch N., 2003. Hydrological process representation at the meso-scale: the potential of a distributed, conceptual catchment model. *Journal of Hydrology*, 291, pp 278-296.
- United States Army Corps of Engineers, 1993. Engineering and Design – River Hydraulics: publication EM 1110-2-1416. U.S. Army Corps of Engineers. Davis, CA.
- United States National Weather Service, 2005. Structure and evolution of squall line and bow echo convective systems. www.crh.noaa.gov
- University of Paisley, 2005. Biodiversity reference: Blanket bog. Biological Sciences, University of Paisley.
- University of Wyoming Department of Atmospheric Science, 2007. Upper air soundings. weather.uwyo.edu/upperair/sounding.html
- Valle-Levinson A., Reyes C. and Sanay R., 2003. Effects of Bathymetry, Friction, and Rotation on Estuary-Ocean Exchange. *J. Phys. Oceanography*, 33, 11, pp.2375-2393.
- van Dam O., 2001. Forest filled with gaps. Effects of gap size on water and nutrient cycling in tropical rain forest. A study in Guyana. Tropenbos-Guyana Programme, Georgetown, Guyana. Chapter 4: FORGAP: A model for solar radiation, evapotranspiration and soil water dynamics in tropical rain forest gaps.
- van Genuchten, M.T., 1980. A closed-form equation for predicting the hydraulic conductivity of unsaturated soils. *Soil Science Soc. America Journal*, 44.
- Verbunt M., Zappa M., Gurtz J. and Kaufmann P., 2006. Verification of a coupled hydrometeorological modelling approach for alpine tributaries in the Rhine basin. *Journal of Hydrology* 324, pp 224-238.
- Vionnet C.A., Tassi P.A. and Martín-Vide J.P., 2004. Estimates of flow resistance and eddy viscosity coefficients for 2D modelling on vegetated floodplains. *Hydrological Processes*, 18, 2907-2926.
- Wang W., Barker D., Bray J., Bruyère C., Duda M., Dudhia J., Gill D. and Michalakes J., 2007. ARW Version 2 Modelling System User's Guide. National Center for Atmospheric Research, Boulder, Colorado.
- Ward A.D. and Trimble S.W., 2003. Environmental Hydrology. Lewis Publishers, New York
- Watson E.G., 1960. Glacial landforms in the Cader Idris area. *Geography*, 45.

- West E.A., 1978. The equilibrium of natural streams. Geo Abstracts Ltd, University of East Anglia.
- West R.G., 1977. Pleistocene Geology and Biology. Longman, London.
- Wetterzentrale, 2005. Europa/Atlantik UKMO (Bracknel) Archiv.
www.wetterzentrale.de
- Weyman D.R., 1973. Measurements of the downslope flow of water in a soil. Journal of Hydrology, 20 pp.267-288.
- Wicker, L. J. and W. C. Skamarock, 2002. Time splitting methods for elastic models using forward time schemes. Mon. Wea. Rev., 130, 2088-2097
- Wiesner C.J., 1970. Hydrometeorology. Chapman and Hall Ltd, London.
- Winter T.C. et al., 1998. Ground water and surface water: a single resource. U.S. Geological Survey Circular 1139. Denver, Colorado.
- Wittenberg H. and Sivapalan M., 1999. Watershed groundwater balance estimation using streamflow recession analysis and baseflow separation. Journal of Hydrology 219 pp.20-23.
- Wohl E.E., 2000. Mountain Rivers. American Geophysical Union, Washington DC.
- Wood A., 1969. The Pre-Cambrian and Lower Palaeozoic rocks of Wales. University of Wales Press.
- Xue M., 2006. Convection-Resolving Numerical Weather Prediction with WRF. Proceedings of the 8th WRF Users' Workshop, NCAR, Boulder, Colorado.
- Yang C.T. and Simões F.J.M., 2000. User's Manual for GSTARS 2.1 (Generalised Stream Tube model for Alluvial River Simulation version 2.1). U.S. Department of the Interior Bureau of Reclamation. Denver, Colorado.
- Yates L.M., 2004. An evaluation of the Geomorphological River Habitat Survey through a study of the Mawddach Catchment. Unpublished MSc dissertation. University of Wales, Bangor.
- Yu Z., Lakhtakia B., Yarnal B., White R.A., Miller D.A., Frakes B., Barron E.J., Duffy C. and Schwartz F.W., 1999. Simulating the river-basin response to atmospheric forcing by linking a mesoscale meteorological model and hydrological model system. Journal of Hydrology 218, pp 72-91.
- Zheng L. and Weisberg R.H., 2004. Tide, buoyancy, and wind-driven circulation of the Charlotte Harbor estuary: A model study. J. Geophysical Research, v.109.