

December 2008

CURRICULUM VITAE

Dr. Lydia Dümenil Gates

Home Address Saselbergring 60
 22395 Hamburg, Germany
 tel.: +49 40 60 20 85 54
 Email: lydiagates@aol.com
 Cell Phone: +49 173 7186580

Date of Birth 17 May 1955 in Aachen, Germany

Nationality German; permanent resident USA

Education

1974-1980 University of Cologne, Germany,
 Department of Meteorology, Diplom-Meteorologe.

1984 University of Cologne, Germany,
 Department of Meteorology, Dr. rer. nat. (Ph. D.)

Professional Employment

1981-1986	Scientist, Research Department, <i>European Centre for Medium-Range Weather Forecasts</i> , Reading, U.K.
1986-1988	Research Scientist, Meteorology Department, <i>Universität Hamburg</i> , Projektstelle Sonderforschungsbereich 318 (Processes Relevant to Climate in the System of Ocean, Atmosphere and Cryosphere), Hamburg, Germany.
1989-1990	Senior Scientist, Meteorology Department, <i>Universität Hamburg</i> , Hamburg, Germany.
1991-2000	Senior Scientist, Research Coordinator and Deputy to the Director, Prof. Dr. Lennart Bengtsson, <i>Max-Planck-Institut für Meteorologie (MPI)</i> , Hamburg, Germany.
11/1996-2/1997	Visiting Scientist (Temporary Employee), Program for Climate Model Diagnosis and Intercomparison, <i>Lawrence Livermore National Laboratory</i> , University of California, Livermore, CA, USA.
9/1997 - 3/1998	Acting Director, <i>CLIVAR International Project Office</i> (World Climate Research Programme), c/o Max-Planck Institute for Meteorology, Hamburg, Germany.
2000	Associate Research Scientist, <i>Institute for the Global Environment and Society, Center for Ocean-Land-Atmosphere Studies (COLA)</i> , Calverton, MD, USA.
2001 - 2003	Senior Scientist, Earth Sciences Division, <i>Lawrence Berkeley National Laboratory (LBL)</i> , University of California, Berkeley, CA, USA.
2003 - 2004	Program Director, Large-scale Dynamic Meteorology Program, Division of Atmospheric Sciences, <i>National Science Foundation (NSF)</i> , Arlington, VA, USA.
2004 - 2005	Program Director, Climate and Large-scale Dynamics Program, Division of Atmospheric Sciences, <i>National Science Foundation (NSF)</i> , Arlington, VA, USA.
2006 - 2008	Executive Officer, Global Water System Project, Joint Project of the Earth System Science Partnership; employed by United Nations University, Kyoto, Japan; <i>GWSP International Project Office</i> , c/o Centre for Development Research, Universität Bonn, Bonn, Germany.
2008 - present	Senior Scientific Coordinator, MILIEU Project, <i>Freie Universität Berlin</i> , Berlin, Germany

Current Employment

The MILIEU Project unites about 35 academic researchers in the geosciences departments of four universities in the German capital region of Berlin. This consortium was created in response to a competition for third party-funding in Berlin. The main topic of research is the role of the environment and global change with a view to ecosystem services, the health of animals, plant biodiversity and human well-being in urban settings and their rural surroundings. This research is based on a comprehensive array of expertise and observations networks available in the area.

Research and Academic Experience

At NSF: numerical modelling research on the water cycle in the Amazon region as part of NSF's Individual Research and Development Plan for program directors in collaboration with Dr. E. Roeckner at MPI Hamburg.

At LBL: research on the hydrological cycle on timescales from days to decades and under changed climate conditions. Climate and infiltration processes in the Yucca mountain region. Paleo-climate studies.

At COLA: research on the interaction of vegetation and climate.

At MPI: development and application of global climate models; parameterisation of convection, planetary boundary layer and land surface processes with an emphasis on the regional effects of vegetation and hydrology; studies of the climate of the Amazon region, the hydrological cycle in the Arctic and the predictability of the Asian monsoon system; Mediterranean deforestation; hydrological modelling of large catchments; analysis of regional models and validation of regional datasets; modelling of extreme events in the Odra River catchment.

At the University of Hamburg: research in climate modelling, in particular related to parameterization of land-surface processes; lectures and supervisor of students during Diploma and Ph. D. courses.

At ECMWF: research on boundary layer processes, development and maintenance of software related to the operational medium-range weather forecasting system.

At the University of Cologne: research in tropical meteorology, especially the parameterization of cumulus clouds.

Managerial and Administrative Duties

At GWSP IPO: The Global Water System Project (GWSP) is a Joint Project in the Earth System Science Partnership (ESSP). The role of the Executive Officer is to implement the research strategy of this project in close coordination with the global environmental change Programmes (DIVERSITAS, IGBP, IHDP, WCRP) and their projects and sponsors, the ESSP, as well as with other relevant institutions. GWSP initiates and coordinates global water system science that is relevant to assessments and defines a strong partnership with policy makers in its scientific framework. GWSP addresses scientific water issues that are global in extent in a fully integrated and multi-disciplinary way. Questions relevant to the Millennium Development Goals are at the forefront of GWSP research. In its current production phase, GWSP is embarking on the development of a large-scale integrated program of research that will guide efforts of adaptation and mitigation of global change in river catchments on all continents.

In support of this project, the Executive Officer directs an International Project Office with two staff scientists, support staff, students and interns. The Executive Officer is responsible for ensuring adequate international burden-sharing of project expenditure and leads the fundraising efforts in support of IPO operations and science activities of the project.

The IPO organizes meetings of the GWSP Scientific Steering Committee and other working groups, sponsors or co-sponsors workshops and science conferences with other programmes (e.g. on dams and reservoirs, global water policy and assessments, world water balance, freshwater biodiversity, etc.), and informs

stakeholders, policy makers and the general public about the project's scientific highlights in various media. The IPO represents the programme at international and inter-governmental meetings.

At NSF: management of the part of the Climate and Large-scale Dynamics Program that deals with stratospheric circulation, intra-seasonal variability, water and carbon cycle, numerical weather prediction, data assimilation and observations related to large-scale dynamic meteorology; the program has an annual budget of 18 million US \$; planning of future NSF inter-disciplinary initiatives; participation in interagency working groups for the co-ordination of projects.

At MPI: Research Coordinator and Deputy to the Director; management and coordination of MPI's scientific program; staff management and human resources; cooperation with national, European and international partner institutions, interaction with national and international funding agencies; presentation of MPI research and plans to government agencies and cooperating institutions; organization of international conferences, workshops and visits of delegations, coordination of the visiting scientist and student exchange programme of the department; responsibility for the general budget of the department as well as external funding and grants in the annual amount of five million DM for a staff of forty.

At CLIVAR IPO: During my employment at the Max-Planck Institute, I spent seven months working for WCRP as the Acting Director of the CLIVAR International Project Office, which was hosted by MPI and funded in part by the German Ministry of Education and Research (BMBF). I represented CLIVAR at meetings in Europe, Asia and the U.S. and negotiated with funding agencies. With a view to moving the development of the CLIVAR project forward, my duties included editing the CLIVAR Initial Implementation Plan and responsibility for the budget and staff (one scientist and one administrative assistant). Assisted by the WCRP office in Geneva, the IPO organized the WMO/IOC/ICSU Conference on the WCRP Climate Variability and Predictability Study (CLIVAR) held at UNESCO in Paris in 1998. I supervised the organization of committee meetings and the publication of their results in official documents.

Languages

Fluent in German, English, French.

Professional Memberships

Deutsche Meteorologische Gesellschaft

American Meteorological Society

European Geophysical Union

Participation in National and International Scientific Committees

WCRP/TOGA Monsoon Numerical Experimentation Group, 1990 - 1994.

Deutsche Forschungsgemeinschaft Planning Group "Regionalisation of Hydrological Parameters", 1990.

German National Coordination Committee for IGBP, 1990 - 1992.

Deutsche Forschungsgemeinschaft Coordination Committee for WCRP/GEWEX/BALTEX, 1990.

WCRP/GEWEX/GCIP Science Panel, 1991 - 1995.

IGBP-DIS Working Group on Remote Sensing, Toulouse, 1991.

WCRP/GEWEX PILPS Working Group, 1992 – 1995.

European Geophysical Society, Section Secretary for Climate, 1992 - 1996.

Advisory Board for the Global Runoff Data Centre, 1992.

German National Committee on GCOS (Global Climate Observing Systems), 1992 - 1993.

GCOS Hydrological Panel, 1992.

Bundesministerium für Forschung und Technologie, Expert Meeting on Higher Resolution Modelling, 1993.

Deutsche Forschungsgemeinschaft Coordination Committee on "The effect of the hydrological cycle on biosphere and climate", 1993.

European Geophysical Society, Milankovitch Medal Committee, 1994.

WCRP/GEWEX/GCIP Numerical Experimentation Panel, 1995 - 1997.

WCRP/CLIVAR (Climate Variability and Predictability Programme) Asian-Australian Monsoon Panel, 1996 – 2001.

IGBP BAHC/ISLSCP international committee meeting, Invited Expert, 2001.

U.S. Climate Change Science Program Interagency Working Group on Water Cycle Research, Member, 2003- 2005.

Planning and Integration Team of the U.S. Interagency Working Group on Earth Observations (the program is currently implemented as GEOSS (Global Earth Observation System of Systems)), Member, 2003 – 2005.

Steering Committee UNESCO Ecohydrology Programme, Ex Officio Member, 2008.

Earth System Science Partnership (ESSP) Scientific Committee, Ex-officio Member, 2007-2008.

SCENES, 6th Framework EU Project “Water Scenarios for Europe and for Neighbouring States”, Panel Member ‘Scenario Development’, 2008.

Visiting Scientist

1987 Scripps Institution of Oceanography, La Jolla, CA, USA.

1996 Visiting Scientist and Temporary Employee, Program for Climate Model Diagnosis and Intercomparison, Lawrence Livermore National Laboratory, University of California, Livermore, CA, USA.

2004 Max-Planck-Institut für Meteorologie, Hamburg, Germany.

2006 Centre for Atmosphere and Ocean Sciences, University of Bangalore, Bangalore, India.

Professional or Residential Stays Abroad

A meteorologist by training, I started my career as a junior scientist in the Research Department of the European Centre for Medium-range Weather Forecasts, an international organization supported by 25 European states, and lived in the United Kingdom from 1981 to 1986. In 1986 I returned to Germany to do climate research at Hamburg University and MPI. In the winter of 1996/97, I spent several months at the Lawrence Livermore National Laboratory in Livermore, California, in order to evaluate MPI climate simulations in relation to other model simulations in the context of AMIP (Atmospheric Model Intercomparison Project). In the year 2000, I moved to the U.S. for family reasons and lived and worked in California and Washington, D.C. In 2006 I returned to Europe to take up the position as Executive Officer of GWSP in Bonn, Germany.

Activities of an International Character

At the National Science Foundation in Arlington, VA, USA, I was responsible for the Large-scale Dynamics Program in the Atmospheric Sciences Division. In addition to acting as the liaison to national U.S. agencies, I contributed to U.S. documents in support of the international activities of the Group on Earth Observations (GEO). My portfolio of meteorological research also allowed me to interact with scientists of the AMMA and THORPEX programmes.

MPI shares its infrastructure and modelling facilities with visiting scientists from all over the world. As the institute's research co-ordinator, I have organized many such visits. I have occasionally been part of a foreign student's thesis committee abroad and have supervised a Ph.D. student from Indonesia. This was made possible due to the unique association of MPI with the University of Hamburg.

As a climate modeller, I have enjoyed many opportunities to collaborate with scientists from all over the world. I represented MPI as one of the original participants in AMIP. In Europe, MPI has long participated in EU-sponsored coordinated research projects. I was invited to join SLAPS, a precursor of the WCRP's PILPS Program, a joint project by Italian and Irish hydrologists, and French climate modellers in 1989. My work on the inter-annual variability of the Indian monsoon has taken me to Asia several times for presentations on research results and as a member of the CLIVAR/TOGA Monsoon Numerical Experimentation Group in the early 1990s. MPI's involvement with WCRP's GEWEX/BALTEX programme required my travel to Eastern Europe, Poland and Latvia for international joint meetings of meteorologists and hydrologists.

I have travelled extensively to give science presentations at conferences and to represent the interests of MPI and the CLIVAR Program in Germany, European countries, as well as the U.S. and Asia. Most of my public lectures, educational outreach activities, and TV interviews were held in Germany.

One of my favourite international activities was the organization of international climate research conferences. I organized the CLIVAR Conference at UNESCO Headquarters in Paris in 1998 and the pioneering series of climate conferences, the *International Conferences on Modelling of Global Climate Change and Variability*, held in Hamburg in 1989, 1992, 1995 and 1999. For some of the Hamburg conferences, I gave emphasis to a specific topic on IGBP or WCRP results relating to GEWEX or CLIVAR. In the 1990s these conferences served as the premier international forum where climate researchers exchanged their results. The series was continued at MPI in August of 2007 embracing a wide range of topics in Earth System Science.

Editing and Reviews for International Scientific Journals

Executive Editor, international research journal *Climate Dynamics*, 1989 - 2001.

Editorial Board Member *Climate Dynamics*, 2001 – 2003.

Editor, *CLIVAR Initial Implementation Plan*, WCRP No. 103, WMO/TD. No. 869, World Climate Research Programme, Geneva, 1998.

Reviewer for various journals (e.g. *International Journal of Climatology*, *Meteorologische Zeitschrift*, *Journal of Climate*, *Annales Geophysicae*, *Tellus*, *Journal of Hydrology*).

Reviewer of research proposals for various funding agencies (e.g. NERC, NASA, NSF, NOAA).

Participation in IPCC and CCSP

Contributor and Reviewer: Intergovernmental Panel on Climate Change, IPCC Second Scientific Assessment of Climate Change, Cambridge University Press, 1995.

Contributing Author (L. Dümenil): Intergovernmental Panel on Climate Change, IPCC Third Assessment Report, Working Group 1, Chapter 8. Model Evaluation. In: [IPCC, 2001, Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental](#)

Panel on Climate Change, Houghton, J.T., Y. Ding, D. J. Griggs, M. Noguer, P. J. van der Linden, X. Dai, K. Maskell and C.A. Johnson (eds.). Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 881pp.

Reviewer: Strategic Plan for the U.S. Climate Change Science Program, Final Report, Climate Change Science Program and the Subcommittee on Global Change Research, 2003.

Participation in Dahlem Workshop

Participant in Dahlem Workshop on *Integrating Hydrology, Ecosystem Dynamics and Biogeochemistry in Complex Landscapes*, Dahlem Konferenzen der Freien Universität Berlin, Berlin, Germany, March 1998.

Raupach, M.R. (Rapporteur), D.D. Baldocchi, H.-J. Bolle, L. Dümenil, W. Eugster, F.X. Meixner, J.A. Olejnik, R.A. Pielke Sr., J.D. Tenhunen, R. Valentini, Group Report: How is the Atmospheric Coupling of Land Surfaces Affected by Topography, Complexity in Landscape Patterning and the Vegetation Mosaic? In: Integrating Hydrology, Ecosystem Dynamics, and Biogeochemistry in Complex Landscapes, J.D. Tenhunen and P. Kabat (Eds.), 1999, John Wiley and Sons, 177-195.

Organisation and Coordination of Scientific Conferences and Workshops

Conference Coordinator, International Conference on Modelling of Global Climate Change and Variability, Department of Meteorology, Universität Hamburg, 11.-15.9.1989, 300 participants.

Host, UCAR Affiliates Meeting, Department of Meteorology, Universität Hamburg, September 1989.

Host, CAS/JSC WGNE Meeting, Department of Meteorology, Universität Hamburg, September 1989.

Convenor, Session SII.2 on Land Surface-Atmosphere Processes, EGS XV General Assembly, Copenhagen, April 1990.

Conference Coordinator, Second International Conference on Modelling of Global Climate Change and Variability, 7.-11.9.1992, Max-Planck-Institut für Meteorologie, Hamburg, 300 participants.

Organization, Joint Scientific Steering Committee Meeting for GCOS, MPI Hamburg, 19.-23.9.1994.

Local Organizing Committee, European Geophysical Society General Assembly, Hamburg, May 1995, 3000 participants.

Convenor, Session on Synoptic and Intraseasonal Atmospheric Variability, European Geophysical Society General Assembly, Hamburg, May 1995.

Conference Coordinator, Third International Conference on Modelling of Global Climate Change and Variability, 4.-8.9.1995, Max-Planck-Institut für Meteorologie, Hamburg, 300 participants.

Organization, Tag der Forschung (Science Day for the public), Max-Planck-Institut für Meteorologie, Hamburg, September 1996.

Organization, WMO/IOC/ICSU Conference on the WCRP Climate Variability and Predictability Study (CLIVAR), UNESCO, Paris, 2.-4.12.1998, 42 governmental delegations.

Project Manager of the MPI/DKRZ Contribution, EXPO 2000 World Exposition in Hannover, Germany, Multi-media (Computer Animation, Interactive Information Kiosk, Internet and Poster) presentation on Anthropogenic Impacts of Climate Change, 1998 – 2000 (Interactive module now permanent exhibit at Universität Hamburg).

Conference Coordinator and Member Scientific Steering Committee, Fourth International Conference on Modelling of Global Climate Change and Variability, 13.-17.9.1999, Max-Planck-Institut für Meteorologie, Hamburg, 320 participants.

Member Scientific Steering Committee, International Conference on Earth System Modelling, 15.-19.9.2003, Max-Planck-Institut für Meteorologie, Hamburg, 350 participants.

IHDP Open Science Conference 2008 Planning Team, 2007-2008.

Research Grants

EEC (European Community) Contract EPOCH-CT90.0016, Spatial Variability of Land Surface Processes (SLAPS) I, Meteorologisches Institut der Universität Hamburg, 1989 - 1990.

EEC Contract PL890016 EPOCH-RTD, Spatial Variability of Land Surface Processes (SLAPS) II, Meteorologisches Institut der Universität Hamburg, 1/1991 - 12/1992.

EEC Contract EV5V-CT92-0125, Physical Parameterisations and Climate Response, MPI, 1/1993 - 6/1995.

Bundesministerium für Forschung und Technologie (BMFT) Parameterisierung, Erweiterung und Verifizierung der hydrologischen Modellkomponente für Landflächen des ECHAM-Modells Teil I (Extension of the ECHAM model hydrology. Part I), MPI, 1/1994-12/1996.

Bundesministerium für Forschung und Technologie (BMFT) Parameterisierung, Erweiterung und Verifizierung der hydrologischen Modellkomponente für Landflächen des ECHAM-Modells Teil II (Extension and evaluation of the ECHAM model hydrology. Part II), Ruhr-Universität Bochum, 1/1994-12/1997.

EEC Contract ENV4-CT95-0112, Land Surface Processes and Climate Response, MPI, 7/1996 - 10/1998.

Internationales Büro des BMBF (Bundesministerium für Bildung, Wissenschaft, Forschung und Technologie, Bonn, Germany), Kooperationsprojekt mit BPPT Jakarta, Wissenschaftlich-technologische Zusammenarbeit zwischen der Bundesrepublik Deutschland und der Republik Indonesien (two visiting scientists), Rainfall patterns in Indonesia and their relationship with ENSO events, 1998 – 1999.

EEC Contract EVK2-1999-00187, Predictability and Variability of Monsoons, and the Agricultural and Hydrological Impacts of Climate Change, MPI, 2000 – 2001.

Supervisor of Graduate and Ph. D. Students

Diplomarbeit Sabine Schroeder, Universität Hamburg, 1989, Einfluß einer eisfreien Arktis auf die allgemeine Zirkulation im Winter. (Influence of an ice-free Arctic ocean on the general circulation in winter.)

Diplomarbeit Edelgard Kall, Universität Hamburg, 1992, Sensitivitätsexperimente mit einem eindimensionalen Biosphären-Atmosphären-Modell. (Sensitivity experiments with a one-column biosphere-atmosphere model.)

Member Ph. D. Committee, Jan Polcher, LMD, Paris, France, 1993.

Ph. D. student Martin Wild, ETH Zürich, Switzerland, 1994.

Member Ph. D. Committee, Herve Douville, CNRM, Toulouse, France, 1995.

Ph. D. student Beate Müller, Ruhr-Universität Bochum, 1995.

Diplomarbeit Hans Stefan Bauer, Universität Hamburg, 1996, The tropical easterly jet in the ECHAM models of MPI.

Ph. D. student Stefan Hagemann, Universität Hamburg, 1994 - 1997, Development of a parameterization of the lateral water flow contributing to river discharge at the global scale.

Diplomarbeit Stefan Liess, Universität Hamburg, 1997, Impact of deforestation on the climate in the Mediterranean region.

Ph. D. student Jan-Peter Schulz, Universität Hamburg, 1993 - 1998, On the role of the land surface representation and the numerical coupling to the atmosphere for the simulated climate of the global ECHAM4 model.

Member Ph. D. Committee, Sajani Surendran, Bangalore University, India, 1999, Simulation of monsoon precipitation and its variation by atmospheric general circulation models.

Ph. D. student Edvin Aldrian, Universität Hamburg, 2000 – 2003, Simulation of Indonesian rainfall with a hierarchy of climate models.

Keynote or Invited Speaker at Scientific Conferences

The performance of the T21-Model and sensitivity experiments, Colloquium, University of Bangalore, India, 30.11.1988.

Wechselbeziehungen zwischen der eurasischen Schneebedeckung, dem asiatischen Monsun und dem ENSO-Phänomen, Kolloquium, Universität Köln, 10.5.1989.

Scenarios of climate change, video presentation, 1990 Science and Engineering Symposium. Organized by Cray Inc., London, 10.-28.10.1990.

Modellierung des zusätzlichen Treibhauseffekts, Kolloquium, Universität Hannover, 22.11.1990.

Impacts of Climate Change, Institut für Bioklimatologie, Göttingen, 5.2.1991.

Comparing three land surface schemes used in GCMs, European Geophysical Society XVI General Assembly, Wiesbaden, 1991.

Empfindlichkeitsstudien zur Monsunzirkulation 1987 und 1988 (Sensitivity experiments regarding the monsoon circulation in 1987 and 1988), Deutsche Meteorologentagung, Berlin, 19.3.1992.

Land surface energy fluxes: Comparing three models, IUGG XXI General Assembly, Yokohama, Japan, 1993.

Dümenil, L. and U. Schulzweida: Continental scale river runoff used for GCM validation, The Royal Society European Conference on the Global Energy and Water Cycle, London, 18.-22.7. 1994.

Parameterization of the lateral discharge for the global scale, BALTEX Hydrological Modelling Workshop, Warsaw, Poland, 9.-11.9.1996.

Simulation of the Indian summer monsoon in the land-ocean-atmosphere system of the ECHAM4-OPYC coupled GCM. International Conference on the Variability and Predictability of the Asian Monsoon, Xi'an, China, 22.-26.9.1998.

Simulation of the Indian summer monsoon in the land-ocean-atmosphere system of a coupled GCM. SCOPE International Workshop on Environmental Biogeochemistry, Jawaharlal Nehru University, New Delhi, India, 13.- 18.12.1998.

Numerical simulation of the changes in the hydrological cycle due to deforestation and afforestation in the Mediterranean region. MEDESERT 99, Conference internationale synergies dans les processus de desertification en region Mediterraneenne – mecanismes et indicateurs precoces, Societe Meteorologique de France, Perpignan, 16.-19.3.1999.

Hydrology modelling – the requirements for global general circulation models, Session HSA3, EGS XXIVth General Assembly, Den Haag, 19.-23.4.1999.

Das Klimasystem – interne Wechselwirkungen. 3. Kongress für Geoökologie. Umweltsystemanalyse: Dynamik natürlicher und anthropogener Systeme und ihre Wechselbeziehungen, Technische Universität Braunschweig, 14.-16.10.1999.

Influence of vegetation, deforestation and afforestation on the climate in the Mediterranean. Advanced Course: Climate Change in the Mediterranean Region – Part 1: Physical Aspects. UNESCO Abdus Salam Intern. Centre for Theoretical Physics, Trieste, Italy, 12.-16.3.2001.

Climate change – past and future. From Paleoclimate to Global Change. ESA/EURISY Ninth Information Youth Forum on Climate Change: Past and Future. Parque de las Ciencias, Granada, Spain, 1.-4.11.2001.

The Indian monsoon in a hierarchy of MPI models. Guest Scientist Lecture at Center for Atmosphere and Ocean Sciences, University of Bangalore, India, 1.3.2006.

An overview of the scientific framework of the Global Water System Project, Keynote Address, Global Climate Change and Water Resources Risk Management of the Yellow River Basin, Session co-sponsored by GWSP International Project Office and GWSP Asia Network Scientific Office, Third International Yellow River Forum, Dongying, China, 16.-19.11.2007.

The Global Water System Project: Linking the Physical, Biochemical and Biological Facets of the Water Cycle, Keynote Address, A joint AMMA/ENSEMBLES workshop on Seasonal Forecasting in West Africa, its Applications, and Anticipating Future Climate Change, Niamey, Niger, 26.-30.5.2008.

The Global Water System Project, Address to the Intergovernmental Council, 18th Session of the Intergovernmental Council of the UNESCO International Hydrology Programme (IHP), Paris, France, 9.-14.6.2008.

The Global Water System Project – Earth System Science Challenges, Keynote Speaker, GLOWA Projects Conference, Ouagadougou, Burkina Faso, 25.-28.8.2008.

Public Lectures

Globale Klimaänderung, Treffen der niedersächsischen Landjugend, Verden/Aller, 12.6.1988.

Klimaänderungen durch Abholzung des tropischen Regenwaldes, Modellsimulationen des tropischen Regenwaldes (Model simulations of the tropical rainforest region), "Regenwaldtage", Universität Gießen, 8.-9.2.1990.

Globales Klima im Jahr 2000, Fortbildungsveranstaltung für IBM-Mitarbeiter. IBM, Sindelfingen, 23.-27.4.1990.

Klimaänderung, Lions Club, Ahrensburg, 18.3.1991.

Klimaänderung, Bad Münde, 11.4.1991.

Klimaänderung, Gartenbauverband, Straelen, 17.11.1992.

Der indische Sommermonsun, Schulvortrag anlässlich der Hauptversammlung der Max-Planck-Gesellschaft 1997 in Bremen, Leistungskurs Geographie 11. Jahrgang, Schulzentrum des Sekundarbereichs II am Rübekamp, Bremen, 3.6.1997.

Scientific Lectures and Presentations

Das ECMWF T21-Modell, Modellseminar MPI/MI, Hamburg, 1986.

Dümenil, L. und U. Cubasch: Vergleich zweier in der Physikparametrisierung unterschiedlicher T21-Simulationen, Arbeitstreffen BMFT-Projekt, Schneverdingen, June 1987.

Das T21-Modell in Hamburg, Ozon-Workshop, AWI Bremerhaven, 24.-25.11.1987.

Barnett, T.P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif: The effect of Eurasian snow cover on regional and global climate variations. European Geophysical Society XIII General Assembly, Bologna, 21.-25.3.1988.

Parametrisierung von physikalischen Prozessen und ihre Auswirkungen auf die Simulationen mit einem Klimamodell, Kolloquium Universität Kiel, Abt. Maritime Meteorologie, 10.2.1988.

Die Effekte der eurasischen Schneebedeckung auf die Klimavariabilität, T21-Seminar, MPI, Hamburg, 30.-31.5.1988.

Barnett, T.P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif: The effect of Eurasian snow cover on regional and global climate variations. Jacob Bjerknes Symposium on Air-Sea Interactions, American Meteorological Society, Anaheim, CA, 1.-5.2.1988.

Barnett, T.P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif: The effect of Eurasian snow cover on regional and global climate, EGS XIII General Assembly, Bologna, 21.-25.3.1988.

Parametrisierung der Vertikaldiffusion und der konvektiven Wolken, GLOMAC (Global Modelling of Atmospheric Constituents) Workshop, Meteorologisches Institut, Universität Hamburg, 15.-16.6.1988.

Dümenil, L. and E. Roeckner, 1988: Impact of changes in the parametrisation packages on climate simulations, CAS/JSC, WGNE Workshop on Systematic Errors in Models of the Atmosphere, Toronto, Canada, 19.-23.9.1988.

Tracer transport in the T21 model, GLOMAC (Global Modelling of Atmospheric Constituents) Workshop, University of Chicago, 2.-6.10.1988.

Workshop on Parameterization of Fluxes over Land Surfaces, ECMWF, Reading, UK, 24.-26.10.1988.

Barnett, T.P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif: The effect of Eurasian snow cover on regional and global climate variations. International Symposium on Monsoon - Understanding and Prediction, Pune, India, 22.-28.11.1988.

Wechselbeziehungen zwischen der eurasischen Schneebedeckung, dem asiatischen Monsun und dem ENSO-Phänomen, Dt. Meteorologentagung, Kiel, 17.-19.5.1989.

Workshop on Land Surface Processes (EC-Project SLAPS), Paris, 29.-30.9.1989.

Parameterization of soil hydrology using a scheme based on catchment considerations, EGS XVth General Assembly, Copenhagen, 23.-27.4.1990.

Roeckner, E., L. Dümenil, F. Lunkeit, R. Sausen, U. Schlese and B. Rockel: The Hamburg version of the ECMWF model (ECHAM), EGS XVth General Assembly, Copenhagen, 23.-27.4.1990.

1990 Global Change Institute on Earth System Modelling, Snowmass, Colorado, 14.-24.7.1990.

Die Folgen von Klimaänderungen, DVWK (German Water Resources Agency), Bonn, 26.9.1990.

Global transport of tracers in the Hamburg GCM, Expert Meeting on Modelling of Air Pollution Transport, Invited Expert, WMO, Geneva, 5.-7.11.1990.

Behr, H. and L. Dümenil: Simulationen von Schnee mit dem Hamburger Zirkulationsmodell, Dt.-Dt. Treffen, Gosen, November 1990; presented by H. Behr.

The T21 Model, GLOMAC (Global Modelling of Atmospheric Constituents) Workshop, Tegernsee, 29.-30.11.1990.

Klimaszenarien, International Hydrological Panel OHP Meeting, Koblenz, 6.2.1991.

Run-off im ECHAM-Modell, Planungsgespräch zum Europamodell, DWD, Offenbach, 14.-15.2.1991.

Sausen, R. and L. Dümenil: A river run-off model for use in general circulation models, EGS XVI General Assembly, Wiesbaden, 22.-26.4.1991.

- Dümenil, L. and E. Roeckner: Sensitivity of GCM simulations of the northern hemisphere monsoon circulations of 1987 and 1988 to global sea surface temperature changes, TOGA-MONEG Workshop, Boulder, 24.-25.10.1991.
- Dümenil, L.: Diagnostics of extended tropical predictions, FANGIO and AMIP Meeting, Berkeley, California, 17.-21.2.1992.
- Application of global runoff data in GCMs and Report on BALTEX, Workshop on the Global Runoff Data Centre, Koblenz, 15.-17.6.1992.
- Intercomparison of land surface schemes, WCRP/PILPS Meeting, Baltimore, 24.-27.6.1992.
- Klimaänderung, Kolloquium Fraunhofer-Institut, Garmisch-Partenkirchen, 21.10.1992.
- Land surface processes, Kolloquium, Universität Lund, 25.-27.3.1993.
- Representation of land surface processes, Kolloquium, ETH Zürich, 15. 11. 1995.
- Hagemann, S. and L. Dümenil, Development of a parameterization of lateral discharge for the global scale, Third International Conference on Modelling of Global Climate Change and Variability, Hamburg, 4.-8.9.1995.
- Hagemann, S. and L. Dümenil: Development of a parameterisation of lateral discharge for the global scale, EGS XXI General Assembly, Den Haag, 6.-10.5.1996.
- Dümenil, L., S. Hagemann and B. Carlsson: Application of a new global parameterization of lateral discharge in the BALTEX region, EGS XXI General Assembly, Den Haag, 6.-10.5.1996.
- Schulz, J.-P. and L. Dümenil: Comparing the atmospheric response to the ECHAM and SECHIBA land surface schemes, EGS XXI General Assembly, Den Haag, 6.-10.5.1996.
- Development of a parameterization of the lateral discharge component for the global scale, Second International Scientific Conference on the Global Energy and Water Cycle Experiment, Washington D.C., 17.-21.6.1996.
- GEWEX-related research at MPI, 9th Session of the GEWEX SSG, Hamburg, Germany, 6.-10.1.1997.
- Hagemann, S. and L. Dümenil, The HD model: a parameterization of lateral discharge for the global scale, Poster, 13th Conference on Hydrology, American Meteorological Society, Long Beach, CA, 2.-7.2.1997.
- Placing the monsoon in the land/atmosphere/ocean system, Kolloquium, PCMDI, Lawrence Livermore National Laboratory, Livermore, CA, 29.1.1997.
- Cui, M., K. Arpe and L. Dümenil, Characteristics of the Asian summer monsoon in the ECMWF re-analyses and an ECHAM4 T106 GCM simulation, First WMO International Workshop on Monsoon Studies, Denpasar, Bali, Indonesia, 24.-28.2.1997.
- Hagemann, S. and L. Dümenil, Comparison of simulated discharge using input from an atmospheric GCM and a regional climate model in the BALTEX region, Hydrological Symposium at the 5th BALTEX SSG meeting, Riga, Latvia, 14.-15.4.1997.
- Dümenil, L., K. Arpe and M. Cui, Asian summer monsoon onset and Tibetan high, European Geophysical Society XXII General Assembly, Wien, 21.-25.4.1997.
- Hagemann, S. and L. Dümenil, Application of the HD model in the ACSYS region, European Geophysical Society XXII General Assembly, Wien, 21.-25.4.1997.
- Schulz, J.-P., L. Dümenil and J. Polcher, Two land surface schemes implemented in the same GCM, European Geophysical Society XXII General Assembly, Wien, 21.-25.4.1997.
- Hagemann, S. and L. Dümenil, Application of a global discharge model in the BALTEX region to compare an atmospheric GCM and a regional climate model. Poster, Summer School on European Water resources and Climate Change Processes, Cork, Ireland, 15.-25.6.1997.

- Hagemann, S. and L. Dümenil, Application of the HD model in the ACSYS region. Joint Assemblies of IAPSO and IAMAS, Melbourne, 1.-10.7.1997, presented by J.-P. Schulz.
- Schulz, J.-P., L. Dümenil and J. Polcher, Two land surface schemes in the ECHAM4 GCM: sensitivity of the monsoon circulation, Joint Assemblies of IAPSO and IAMAS, Melbourne, 1.7.-5.7.1997.
- Hagemann, S. and L. Dümenil, Comparison of two wetlands datasets. Conference on Remote Sensing for Agriculture, Ecosystems and Hydrology. SPIE, London, 22.-26.9.1997; presented by S. Hagemann.
- Hagemann, S. and L. Dümenil, Anwendung des HD-Modells in der BALTEX-Region. 4. Deutsche Klimatagung, Frankfurt, 1.-3.10.1997; presented by S. Hagemann.
- Dümenil, L., K. Arpe, M. Cui and P. Tschuck, A climatology of onsets and breaks of the Asian summer monsoon from ECMWF reanalyses, WCRP First Conference on Reanalyses, Silver Spring, MD, 27.-31.10.1997.
- Dümenil, L. and S. Bauer, The tropical easterly jet in a hierarchy of general circulation models and the reanalyses, WCRP First Conference on Reanalyses, Silver Spring, MD, 27.-31.10.1997.
- Portrayal of the Indian summer monsoon in the land-ocean-atmosphere system of a coupled GCM, International Conference on Science and Technology, BPPT, Jakarta, 10.-12.11.1997.
- Schulz, J.-P., L. Dümenil and J. Polcher, Impact of different numerical coupling techniques between surface and atmosphere in a GCM, European Geophysical Society XXIIIth General Assembly, 1998.
- Hagemann, S. and L. Dümenil, Comparison of discharge in the BALTEX region derived from ECHAM4 and REMO using the HD model, 2nd International Conference on Climate and Water, Espoo/Helsinki, 17.-10.8.1998.
- Cui, M., F. Ming, S. Lian, K. Arpe and L. Dümenil, Evaluation of daily precipitation estimates in China from the ECMWF and NCEP re-analysis schemes. International Conference on the Variability and Predictability of the Asian Monsoon, Xi'an, China, 22.-26.9.1998, presented by M. Cui.
- Monsoon modelling. Joint Seminar, IIT and National Centre for Medium-range Weather Forecasting, New Delhi, India, 16.12.1998.
- Dümenil, L. and H.S. Bauer, The tropical easterly jet in a hierarchy of GCMs and the reanalyses. EGS XXIVth Annual Assembly, Den Haag, 19.-23.4.1999, presented by H.S. Bauer.
- Hagemann, S., M. Botzet, L. Dümenil and B. Machenhauer, A new global dataset derived from 1km land use satellite data. EGS XXIVth Annual Assembly, Den Haag, 19.-23.4.1999, presented by S. Hagemann.
- Schulz, J.-P., L. Dümenil and J. Polcher, Comparing different numerical coupling techniques between land-surface and atmosphere models. EGS XXIVth Annual Assembly, Den Haag, 19.-23.4.1999, presented by J.-P. Schulz.
- River flow in a doubled CO₂ climate. Colloquium, Earth Sciences Department, Lawrence Berkeley National Laboratory, University of California, Berkeley, CA, 2.6.1999.
- Hagemann, S., M. Botzet, L. Dümenil and B. Machenhauer, Derivation of global GCM boundary conditions from 1 km land use satellite data. IUGG 99, Birmingham, 19.-30.7.1999.
- Schulz, J.-P., L. Dümenil and J. Polcher, Comparing different numerical coupling techniques between land-surface and atmosphere models. IUGG 99, Birmingham, 19.-30.7.1999.
- Hagemann, S. and L. Dümenil Gates, Validation of the hydrological cycle and computation of discharge from ECMWF and NCEP re-analyses, 2nd International Conference on Reanalyses, 23.-27.8.1999.
- Aldrian, E., F. H. Widodo and L. Dümenil Gates: Characteristics of monsoon rains over Indonesia (Poster), Fourth International Conference on Modelling of Global Climate Change and Variability, Hamburg, Germany, 13.-17.9.1999.
- Analysis of global river discharge in a climate at doubling of CO₂ (Poster), Fourth International Conference on Modelling of Global Climate Change and Variability, Hamburg, Germany, 13.-17.9.1999.

- The influence of climate change on river discharge. LOICZ/SCOPE Workshop on Land-Ocean Nutrient Fluxes, Linköping, Sweden, 3.-5.10.1999.
- Der indische Sommermonsun. Modellsimulation und Abschätzung möglicher Klimaänderung. PIK Institutsseminar, Potsdam Institute for Climate Impacts Research, Potsdam, 26.10.1999.
- Simulation of the Indian summer monsoon using the MPI coupled climate model – present-day and at doubled CO₂, International Pacific Research Center, Honolulu, 14.12.1999.
- Climate Change and River Fluxes, SCOPE International Workshop on Land-Ocean Nutrient Fluxes: The Silica Cycle, Nha Trang, Vietnam, 25-27.9. 2000.
- River discharge as a tool for regional assessment of global climate models. Seminar, School of Computational Science and Information Technology, Florida State University, Tallahassee, FL, 23.10.2000.
- Effects of deforestation and afforestation on the climate in the Mediterranean. Seminar, School of Computational Science and Information Technology, Florida State University, Tallahassee, FL, 15.5.2001.
- GWSP: International Coordination of Global Water System Research, “Vulnerability, adaptation, resilience: cutting-edge science for informed decisions”, Side Event at the United Nations Climate Change Conference - 13th Session of the Conference of the Parties (COP 13) and 3rd Session of the Meeting of the Parties to the Kyoto Protocol (CMP 3), Nusa Dua, Bali, 3.-14.12.2007 (presented by F. Schmidt).
- The Global Water System Project – Climate Change and Freshwater Biodiversity, DIVERSITAS-freshwater Meeting, Univ. of Washington, Seattle, 25.-27.2.2008
- The Global Water System Project, presentation to the Climate Program Office, NOAA, Silver Spring, MD, 27.3.2008
- The Global Water System Project - Progress Report, Meeting of the DFG-BMBF German National Committee on Global Change Research, Chiemsee, Germany, 4.-5.10.2008.

University Teaching

- Winter 1986/87, Universität Hamburg, Seminar "Allgemeine Zirkulation" (General circulation), Lecture on Parameterisation of land surface processes.
- Winter 1987/88, Universität Hamburg, course on "Analysensysteme für die numerische Wettervorhersage" (Analysis systems for numerical weather prediction).
- Summer 1987, Universität Hamburg, Supervision Meteorologisches Seminar.
- Summer 1987, Universität Hamburg, Seminar "Allgemeine Zirkulation", Lecture on parameterisation of land surface processes.
- Winter 1987/88, Universität Hamburg, Seminar "Allgemeine Zirkulation", Lecture on Eurasian snow cover and the Indian summer monsoon.
- Summer 1988, Universität Hamburg, Seminar "Allgemeine Zirkulation", Lecture on parameterisation of surface temperature in climate models.

List of Publications

Diplomarbeit

Dümenil, L. and E. Ruprecht, 1984: A diagnostic test of the closure assumption in Arakawa and Schubert's cumulus parameterisation scheme. *Quart. J. Roy. Meteor. Soc.* 110, 1180-1186.

Ph.D. Thesis

Dümenil, L., 1984: Anwendung eines Turbulenzschließungsmodells auf die Parametrisierung der Vertikaldiffusion von Wärme, Impuls und Feuchte im EZMW-Modell. *Mitteilungen aus dem Institut für Geophysik und Meteorologie der Universität zu Köln, Heft 41, Köln.* Published in English as:

Dümenil, L., 1987: Turbulence closure applied to the parameterisation of vertical diffusion. *Tech. Memor. No. 132, European Centre for Medium-Range Weather Forecasts, Reading, 58pp.*

Publications in Books and Peer-reviewed Journals

Barnett, T.P., L. Dümenil, U. Schlese and E. Roeckner, 1988: The effect of Eurasian snow cover on global climate. *Science* 239, 504-507.

Barnett, T.P., L. Dümenil, U. Schlese and E. Roeckner, 1988: Die Wirkung der eurasischen Schneebedeckung auf das globale Klima. *Kurzbericht, Naturwissenschaftliche Rundschau, Heft 9, p. 193.*

Barnett, T.P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif, 1989: The effect of Eurasian snow cover on regional and global climate variations. *J. Atmos. Sci.* 46, 661-685.

Dümenil, L., 1990: Der hydrologische Zyklus im Hamburger Klimamodell ECHAM. In: H.-B. Kleeberg (Ed.), *Regionalisierung in der Hydrologie. DFG Mitt. XI d. Senatskomm. f. Wasserforschung, VCH-Verlag, Weinheim.*

Barnett, T.P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif, 1991: The Asian snow cover-monsoon-ENSO connection. In: M.H. Glantz, R.W. Katz, N. Nicholls (Eds.), *Teleconnections Linking Worldwide Climate Anomalies. Cambridge University Press, Cambridge, 191-225.*

Dümenil, L. and E. Todini, 1992: A rainfall-runoff scheme for use in the Hamburg climate model. In: J.P. O'Kane (Ed.), *Advances in Theoretical Hydrology. A Tribute to James Dooge. Elsevier, Amsterdam, 129-156.*

Dümenil, L. and L. Bengtsson, 1993: Observational and modelling studies of the influence of land surface anomalies on the atmospheric circulation (future directions). In: J. Shukla (Ed.), *Prediction of Interannual Climate Variations. NATO ASI Series, Vol. I 6, Springer, Berlin, Heidelberg, 25-47.*

Barnett, T. P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif, 1993: The effect of Eurasian snow cover on regional and global climate variations. In: V. Ittekott, R. R. Nair (Eds.), *Monsoon Biogeochemistry. Mitteilungen aus dem Geologisch-Paläontologischen Institut der Universität Hamburg, Heft 76, Hamburg, 1-9.*

Bengtsson, L. and L. Dümenil, 1994: Atmospheric climate modelling - a review of current activities at MPI Hamburg. *Proc. Indian Natl. Sci. Acad.* 60 A, 561-592.

- Arpe, K., L. Bengtsson, L. Dümenil and E. Roeckner, 1994: The hydrological cycle in the ECHAM3 simulations of the atmospheric circulation. In: M. Desbois and F. Desalmand (Eds.), *Global Precipitation and Climate Change*, NATO ASI Series, Vol. I 26, Springer, Berlin, Heidelberg, 361-377.
- Sausen, R., S. Schubert and L. Dümenil, 1994: A model of river runoff for use in coupled atmosphere-ocean models. *J. Hydrol.* 155, 337-352.
- Rowntree, P.R. and L. Dümenil, 1995: Hydrology in climate models and effects on climate. In: H. R. Oliver, S. A. Oliver (Eds.), *The Role of Water and the Hydrological Cycle in Global Change*. NATO ASI Series, Vol. I 31, Springer, Berlin, Heidelberg, 59-104.
- Foster, J., R. Koster, H. Behr, L. Dümenil, J. Cohen, R. Essery, G. Liston, S. Thompson, D. Pollard and D. Verseghy, 1996: Snow-mass intercomparisons in the boreal forests from general circulation models and remotely sensed data sets. *Polar Record*, 32, 182, 199-208.
- Foster, J, G. Liston, R. Koster, R. Essery, H. Behr, L. Dümenil, D. Verseghy, S. Thompson, D. Pollard and J. Cohen, 1996: Snow cover and snow mass intercomparisons of general circulation models and remotely sensed datasets. *J. Climate*, 9, 409-426.
- Polcher, J., K. Laval, L. Dümenil, J. Lean and P.R. Rowntree, 1996: Comparing three land surface schemes used in general circulation models. *J. Hydrol.* 180, 373-394.
- Wild, M., L. Dümenil and J.-P. Schulz, 1996: Regional climate simulation with a high resolution GCM: surface hydrology. *Clim. Dyn.*, 12, 755-774.
- Chen, T. H., A. Henderson-Sellers, P.C.D. Milly, A. J. Pitman, A.C.M. Beljaars, F. Abramopoulos, A. Boone, S. Chang, F. Chen, Y. Dai, C.E. Desborough, R.E. Dickinson, L. Dümenil, M. Ek, J.R. Garratt, N. Gedney, Y. M. Gusev, J. Kim, R. Koster, E. Kowalczyk, K. Laval, J. Lean, D. Lettenmaier, X. Liang, J.-F. Mahfouf, H.-T. Mengelkamp, K. Mitchell, O. N. Nasonova, J. Noilhan, J. Polcher, A. Robock, C. Rosenzweig, J. Schaake, C.A. Schlosser, J.-P. Schulz, Y. Shao, A.B. Shmakin, D. L. Verseghy, P. Wetzel, E. F. Wood, Y. Xue, Z.-L. Yang and Q. Zeng, 1997: Cabauw experimental results from the Project for Intercomparison of Landsurface Parameterization Schemes (PILPS). *J. Climate*, 10, 1194-1215.
- Arpe, K., L. Dümenil and M. A. Giorgetta, 1998: Variability of the Indian monsoon in the ECHAM3 model, sensitivity to sea surface temperature, soil moisture, and the stratospheric QBO. *J. Climate*, 11, 1837-1858.
- Hagemann, S. and L. Dümenil, 1998: Development of a parameterization of lateral discharge for the global scale. *Clim. Dyn.*, 14, 17-31.
- Qu, W., A. Henderson-Sellers, A. J. Pitman, T.H. Chen, F. Abramopoulos, A. Boone, S. Chang, F. Chen, Y. Dai, R.E. Dickinson, C.E. Desborough, R.E. Dickinson, L. Dümenil, M. Ek, N. Gedney, Y. M. Gusev, J. Kim, R. Koster, E.A. Kowalczyk, J. Lean, D. Lettenmaier, X. Liang, J.-F. Mahfouf, H.-T. Mengelkamp, K. Mitchell, O.N. Nasonova, J. Noilhan, A. Robock, C. Rosenzweig, J. Schaake, C.A. Schlosser, J.-P. Schulz, A.B. Shmakin, D.L. Verseghy, P. Wetzel, E.F. Wood, Z.-L. Yang and Q. Zeng, 1998: Sensitivity of latent heat flux from PILPS land-surface schemes to perturbations of surface air temperature. *J. Atmos. Sci.*, 55, 1909-1927.
- Schulz, J.-P., L. Dümenil, J. Polcher, A. Schlosser and Y. Xue, 1998: Land surface energy and moisture fluxes: intercomparison of three models. *J. Appl. Meteor.*, 37, 288-307.
- Todini, E. and L. Dümenil, 1998: Estimating large-scale run-off. In: K. Browning and R. Gurney (Eds.), *Global Energy and Water Cycles*. Cambridge University Press, Cambridge, UK, 265-281.
- Dümenil, L., 1999: Simulation of the Indian summer monsoon in the land-ocean-atmosphere system of a coupled GCM. In: V. Ittekkot, V. Subramanian and S. Annadurai (Eds.), *Biogeochemistry of Rivers in Tropical South and Southeast Asia*. Mitt. Geol.-Paläont. Inst. Univ. Hamburg, SCOPE Sonderband Heft 82, Hamburg, 7-32.

- Hagemann, S. and L. Dümenil, 1999: Application of a global discharge model to atmospheric model simulations in the BALTEX Region. *Nordic Hydrology*, 30, 209-230.
- Dümenil Gates, L. and S. Liess, 2001: Impacts of deforestation and afforestation in the Mediterranean region as simulated by the MPI atmospheric GCM. *Global and Planetary Change*, 30, 309-328.
- Hagemann, S. and L. Dümenil Gates, 2001: Validation of the hydrological cycle of ECMWF and NCEP re-analyses using the MPI hydrological discharge model. *J. Geophys. Res.*, 106, 1503-1510.
- Schulz, J.-P., L. Dümenil and J. Polcher, 2001: On the land-surface/atmosphere coupling and its impact in a single column atmospheric model. *J. Appl. Meteor.*, 40, 642-663.
- Hagemann, S. and L. Dümenil-Gates, 2003: Improving a subgrid runoff parameterization scheme for climate models by the use of high resolution data derived from satellite observations. *Clim. Dyn.*, 21, 3-4, 349-359.
- Aldrian, E., L. Dümenil-Gates, D. Jacob, R. Podzun and R. D. Gunawan, 2004: Long-term simulation of Indonesian rainfall with the MPI regional model, *Clim. Dyn.*, 22, 8, 795-814.
- Liess, S. and L. Dümenil-Gates, 2004: Wirkung von Landnutzungsänderungen. *Promet Meteorologische Fortbildung, Deutscher Wetterdienst, Offenbach, Germany*, 30, 3-4.
- Aldrian, E., D. Sein, D. Jacob, L. Dümenil-Gates, R. Podzun, 2005: Modelling Indonesian rainfall with a coupled regional model, *Clim. Dyn.*, 25, 1, 1-17.
- Aldrian, E., L. Dümenil-Gates and F. H. Widodo, 2006: Seasonal variability of Indonesian rainfall in ECHAM4 simulations and in the reanalyses: The role of ENSO. *Theoretical and Applied Climatology*, DOI: 10.1007/s00704-006-0218-8.

Publications in Conference Proceedings and Technical Documents

- Dümenil, L., 1981: Higher order closure schemes. *Tech. Memor. No. 39, European Centre for Medium-Range Weather Forecasts, Reading*, 25pp.
- Sommeria, G., J.-F. Louis and L. Dümenil, 1983: Parameterisation of the atmospheric boundary layer at ECMWF. *Report of the WMO/CAS Expert Meeting on the ABL Parameterisation over the Ocean for Long-range Forecasting and Climate Models, WMO/WCRP, Geneva*.
- Dümenil, L., 1984: A diagnostic study of the closure assumption in the Arakawa-Schubert cumulus parameterisation using GATE-data. *Proceedings of the Workshop on Convection in Large-Scale Models, European Centre for Medium-Range Weather Forecasts, Reading*, 169-186.
- Sommeria, G., L. Dümenil and M. Tiedtke, 1985: Parameterisation of the planetary boundary layer. *GARP Special Rep. No. 43, WMO, Geneva, II-39*.
- Dümenil, L., 1987: Turbulence closure applied to the parameterisation of vertical diffusion. *Tech. Memor. No. 132, European Centre for Medium-Range Weather Forecasts, Reading*, 58pp.
- Dümenil, L. and U. Schlese, 1987: Description of the general circulation model. In: G. Fischer (Ed.), *Climate simulations with the ECMWF T21-model in Hamburg. Large-Scale Atmospheric Modelling Report No. 1, Meteorologisches Institut, Hamburg*, 3-10.
- Dümenil, L. and U. Schlese, 1987: Changes to the parameterisation package and their impact on perpetual January simulations. In: G. Fischer (Ed.), *Climate simulations with the ECMWF T21-model in Hamburg. Large-Scale Atmospheric Modelling Report No. 1, Meteorologisches Institut, Hamburg*, 121-140.

- Dümenil, L., U. Schlese and U. Cubasch, 1987: Comparison of T21-ten-year-integrations with different physics parameterisation packages. In: G. Boer (Ed.), Research Activities in Atmospheric and Oceanic Modelling. WMO/TD No. 200, WMO, Geneva.
- Dümenil, L. and E. Roeckner, 1988: Impact of changes to the parameterization package on climate simulations, CAS/JSC WGNE Workshop on Systematic Errors in Models of the Atmosphere, Toronto, Canada, 19.-23. September 1988, WMO/TD No. 273, WMO, Geneva, 311-318.
- Behr, H. and L. Dümenil, 1988: The T21 snow climatology. In: G. Boer (Ed.), Research Activities in Atmospheric and Oceanic Modelling. WMO/TD No. 263, WMO, Geneva.
- Roeckner, E., G. Fischer, H. Behr, L. Dümenil and S. Starke, 1988: Globale Modelle der Atmosphäre. Tätigkeitsbericht 1986-1988, DFG Sonderforschungsbereich 318, Klimarelevante Prozesse im System Ozean/Atmosphäre/Kryosphäre.
- Dümenil, L. and S. Schröder, 1989: The impact of an ice-free Arctic ocean on the general circulation in winter. Ann. Geophys., Special Issue, p. 115.
- Dümenil, L. and S. Schröder, 1989: The impact of an ice-free Arctic ocean on the general circulation in winter. In: G. Boer (Ed.), Research Activities in Atmospheric and Oceanic Modelling. WMO/TD No. 332, WMO, Geneva.
- Dümenil, L., G. Fischer, E. Kirk, M. Ponater, E. Roeckner, R. Sausen and U. Schlese, 1989: Klimaexperimente mit dem T21 Modell in Hamburg. Status-Bericht BMFT Projekt, Bonn.
- Barnett, T. P., L. Dümenil, U. Schlese, E. Roeckner and M. Latif, 1989: Die Wirkung der eurasischen Schneebedeckung auf das regionale und globale Klima. Ann. Meteor. 26, Selbstverlag des Dt. Wetterdienstes, Offenbach/Main, 135-136.
- Roeckner, E., L. Dümenil, E. Kirk, F. Lunkeit, M. Ponater, B. Rockel, R. Sausen and U. Schlese, 1989: The Hamburg version of the ECMWF model (ECHAM). In: G. Boer (Ed.), Research Activities in Atmospheric and Oceanic Modelling. WMO/TD No. 332, WMO, Geneva.
- Dümenil, L., 1990: Parameterisation of soil hydrology using a scheme based on catchment considerations. Ann. Geophys., Special Issue, 152.
- Sausen, R., S. Schubert and L. Dümenil, 1990: A model of the river run-off for use in a coupled atmosphere-ocean GCM. In: G. Boer (Ed.), Research Activities in Atmospheric and Oceanic Modelling. WMO/TD No. 396, WMO, Geneva.
- Behr, H. and L. Dümenil, 1991: The snow climatology in decadal model simulations. In: R. Sausen (Ed.), Studying climate with the atmospheric model ECHAM. Report No. 9, Large Scale Atmospheric Modelling, Meteorological Institute University of Hamburg, 53-82.
- Roeckner, E., G. Fischer, H. Behr, L. Dümenil and S. Starke, 1991: Tätigkeitsbericht Teilprojekt A1 für 1989-1991. Sonderforschungsbereich 318, Universität Hamburg, 19-32.
- Sausen, R., S. Schubert and L. Dümenil, 1991: A model of the river runoff for use in coupled atmosphere-ocean models. In: R. Sausen (Ed.), Studying climate with the atmospheric model ECHAM. Report No. 9, Large Scale Atmospheric Modelling, Meteorological Institute University of Hamburg, 15-34.
- Schröder, S. and L. Dümenil: Response of the Hamburg climate model to an ice-free Arctic ocean boundary condition. In: R. Sausen (Ed.), Studying climate with the atmospheric model ECHAM. Report No. 9, Large Scale Atmospheric Modelling, Meteorological Institute University of Hamburg, 83-98.
- Dümenil, L., 1992: Empfindlichkeitsstudien zur Monsunzirkulation 1987 und 1988. Ann. Meteor. 27, Selbstverlag des Dt. Wetterdienstes, Offenbach/Main, p. 258.
- Dümenil, L., 1992: Global numerical modelling of large-scale hydrological processes. Report on an International Workshop, February 1992, GKSS, Geesthacht.

- Dümenil, L. and E. Raschke (Eds.), 1992: New generation of radiation budget measurements from space and their use in climate modelling and diagnostic studies. Max-Planck-Institut für Meteorologie Report No. 90, Hamburg, 29 pp.
- Dümenil, L. and E. Roeckner, 1992: Sensitivity of GCM simulations of the northern hemisphere monsoon circulations of 1987 and 1988 to sea surface temperature changes. Report of workshop, Nat. Center for Atmospheric Research, Boulder/Colorado, WCRP-68, WMO-TD. No. 470, WMO, Geneva.
- Roeckner, E., K. Arpe, L. Bengtsson, S. Brinkop, L. Dümenil, M. Esch, E. Kirk, F. Lunkeit, M. Ponater, B. Rockel, R. Sausen, U. Schlese, S. Schubert and M. Windelband, 1992: Simulation of the present-day climate with the ECHAM model: Impact of model physics and resolution. Max-Planck-Institut für Meteorologie Report No. 93, Hamburg, 172 pp.
- Sausen, R., S. Schubert and L. Dümenil, 1992: Oberflächenflüsse in Klimamodellen. *Ann. Meteor.* 27, Selbstverlag des Dt. Wetterdienstes, Offenbach/Main, 262-263.
- Dümenil, L., 1993: Near surface systematic errors in GCM's - dynamics vs. land surface processes. WCRP/GEWEX Newsletter Vol. 2, No. 2, 2-3.
- Dümenil, L., 1993: Sensitivity of the ECHAM 3 model to available soil water holding capacities. In: G. Boer (Ed.), Research activities in atmospheric and oceanic modeling. CAS/JSC Working Group Numerical Experimentation, Report No 18, WMO/TD No. 533, WMO, Geneva.
- Dümenil, L., K. Isele, H.J. Liebscher, M. Schröder, Th. Schumacher and K. Wilke (Eds.), 1993: Discharge data from 50 selected rivers for GCM Validation. Max-Planck-Institut für Meteorologie Report No. 100, Hamburg, 61 pp.
- Dümenil, L., P. Metternich, L. Oedekoven and V. Vent-Schmidt (Eds.), 1993: GCOS - the German view. Bundesministerium für Forschung und Technologie, ATW-Verlag, Siegburg.
- Dümenil, L. and E. Todini, 1993: The ECHAM rainfall runoff model combined with variable soil water holding capacities. In: H.-J. Bolle, R. A. Feddes and J. D. Kalma (Eds.), Exchange Processes at the Land Surface for a Range of Space and Time Scales. IAHS Publ. No. 211, Wallingford, UK.
- Dümenil, L., K. Laval, J. Lean, and J. Polcher, 1993: Comparing three land surface schemes used in GCMs. *Ann. Geophys.* 11, p. 265.
- Arpe, K., H. Behr and L. Dümenil, 1993: Validation of the ECHAM models with respect to precipitation, snow and river runoff. In: Analysis methods of precipitation on a global scale. Report of a GEWEX Workshop, Koblenz, Germany, September 1992, WCRP-81, WMO/TD No. 558, WMO, Geneva, A/104-122.
- Arpe, K., H. Behr and L. Dümenil, 1993: Validation of the ECHAM models with respect to precipitation, snow and river runoff. In: Global observations, analyses and simulation of precipitation. Report of a GEWEX Workshop, Camp Springs, Maryland, USA, October 1992, WCRP-78, WMO/TD No. 544, WMO, Geneva, 107-112.
- Dooge, J.C.I., P.R. Rowntree, M. Vauclin, E. Todini, L. Dümenil, K. Laval, J.C. André and H. Stricker, 1993: Spatial variability of land surface processes (SLAPS II), final report for project No. EPOC-CT90-0016. In: I. Troen (Ed.): Proceedings of the Copenhagen Climate Conference, EUR 15921, European Commission, 637-644.
- Droogers, P., J. Dooge, L. Dümenil, D. Entekhabi, K. Laval, J. Lean, S. Planton, E. Todini and M. Vauclin, 1993: Comparison of soil moisture codes used in GCMs and hydrology. Proceedings of the IUGG XX General Assembly, Yokohama, Japan.
- Droogers, P., J. Dooge, L. Dümenil, D. Entekhabi, J. Polcher, J. Lean, S. Planton, E. Todini and M. Vauclin, 1993: Comparison of soil moisture codes used in GCMs and hydrology. *Ann. Geophys.* 11, p. 265.
- Liebscher, H.J., H. Bartels, L. Dümenil, T. Guenther, P. Krahe, R. Roth and U. Schröder, 1993: Climatological data and climate information for water resources projects. Report of the IHP/OHP Working Group of the Federal Republic of Germany. WMO/TD No. 585, WMO, Geneva.

- Dümenil, L., K. Arpe and L. Bengtsson, 1994: Variability of the Indian monsoon in the ECHAM3 model, Part I: MONEG and AMIP experiments. Conference on Monsoon Variability, Trieste, May 1994, WCRP-84, WMO/TD No. 619, WMO, Geneva, 609-621.
- Arpe, K., L. Dümenil, L. Bengtsson and M. Giorgetta, 1994: Variability of the Indian monsoon in the ECHAM3 model, Part II: Sensitivity to sea surface temperatures of the northern Indian ocean, soil moisture over Eurasia and the stratospheric QBO. Conference on Monsoon Variability, Trieste, May 1994, WCRP-84, WMO/TD No 619, WMO, Geneva, 621-629.
- Arpe, K., L. Bengtsson, L. Dümenil and E. Roeckner, 1994: Impacts of the stratospheric QBO, soil moisture over Siberia and sea surface temperature on the variability of precipitation over India in the ECHAM3 model. Proceedings of the 18th Annual Climate Diagnostic Workshop, 1-5 November 1993, Boulder, Colorado, 146-148.
- Foster, J., G. Liston, R. Koster, R. Essery, H. Behr, L. Dümenil, D. Versegny, S. Thompson, D. Pollard and J. Cohen, 1994: Intercomparison of snow cover and snow mass in North America from general circulation models and remote sensing. Preprint Volume of the 6th Conference on Climate Variations, 23-28 January, Nashville, TN. American Meteorological Society, Boston.
- Dümenil, L., J.-P. Schulz, J. Polcher, A. Schlosser and Y. Xu, 1995: Land surface energy fluxes: comparing three models. Proceedings of the IUGG XXI General Assembly, 2-14 July 1995, Boulder, Colorado.
- Wild, M., L. Dümenil and J.-P. Schulz, 1995: High resolution GCM simulations over Europe: surface processes. Max-Planck-Institut für Meteorologie Report No. 176, Hamburg, 38pp.
- Dümenil, L. and S. Hagemann, 1996: Application of a new global parameterization of lateral discharge in the BALTEX region. *Ann. Geophys.* 14, p. 574.
- Golitsyn, G.S., K. Arpe, L. Bengtsson, L. Dümenil, A.V. Eliseev, C.K. Folland, V.A. Govorkova, V.P. Meleshko, A.V. Meshcherskaya, I.I. Mokhov, T.V. Pavlova, A.C. Renshaw and P.V. Sporyshev, 1996: The study of the atmospheric water cycle variability in eastern Europe and its association with the Caspian Sea level change. In: A. Staniforth (Ed.), *Research Activities in Atmospheric and Oceanic Modelling*. Report No. 23, WMO/TD No. 734, WMO, Geneva.
- Hagemann, S. and L. Dümenil, 1996: Development of a parameterization of lateral discharge for the global scale. *Ann. Geophys.* 14, p. 549.
- Hagemann, S. and L. Dümenil, 1996: Development of a parameterization of the lateral discharge component for the global scale. In: A. Staniforth (Ed.), *Research Activities in Atmospheric and Oceanic Modelling*. Report No. 23, WMO/TD No. 734, WMO, Geneva.
- Hagemann, S. and L. Dümenil, 1996: Development of a parameterization of the lateral discharge component for the global scale, WCRP/GEWEX Newsletter, Vol. 6, No. 3, 6-7.
- Hagemann, S. and L. Dümenil, 1996: Development of a parameterization of lateral discharge for the global scale. Max-Planck-Institut für Meteorologie Report No. 219, Hamburg, 32pp.
- Loth, B., L. Dümenil and H. Behr, 1996: The snow cover in the Hamburg climate model ECHAM and its sensitivity to the snow parameterization. AGU 1996 Fall Meeting, 15.-19. December 1996, San Francisco, CA.
- Roeckner, E., K. Arpe, L. Bengtsson, M. Christoph, M. Claussen, L. Dümenil, M. Esch, M. Giorgetta, U. Schlese and U. Schulzweida, 1996: The atmospheric general circulation model ECHAM4: Model description and simulation of present-day climate. Max-Planck-Institut für Meteorologie Report No. 218, Hamburg, 90pp.
- Schulz, J.-P. and Dümenil, L., 1996: Comparing the atmospheric response to the ECHAM and SECHIBA land surface schemes. *Ann. Geophys.* 14, p. 552.
- Schulz, J.P. and L. Dümenil, 1996: Validation and sensitivity of the parameterization of land surface processes in the ECHAM atmospheric general circulation model. In: A. Staniforth (Ed.), *Research Activities in Atmospheric and Oceanic Modelling*. Report No. 23, WMO/TD No. 734, WMO, Geneva.

- Schulz, J.-P., L. Dümenil, J. Polcher, A. Schlosser and Y. Xue, 1996: Land surface energy and moisture fluxes: intercomparison of three models. Max-Planck-Institut für Meteorologie Report No. 221, Hamburg, 32pp.
- Dümenil, L., S. Hagemann and K. Arpe, 1997: Validation of the hydrological cycle in the Arctic using river discharge data. Proc. of AMS, NSF and NASA Joint Workshop on Polar Processes in Global Climate, 13.-15. November 1996, Cancun, Mexico.
- Arpe, K., H. Behr and L. Dümenil, 1997: Validation of the ECHAM4 climate model and re-analyses data in the Arctic region. In: Proceedings of the Workshop on the Implementation of the Arctic Precipitation Data Archive (APDA) at the Global Precipitation Climatology Centre (GPCC), Offenbach, Germany, 10-12 July 1996. WCRP-98, WMO/TD-No. 804, WMO, Geneva, 31-40.
- Hagemann, S. and L. Dümenil, 1997: Application of the hydrological discharge model in the BALTEX region: Comparison of simulated discharge using input from an atmospheric global circulation model and a regional climate model. In: A. Staniforth (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 25, WMO/TD No. 792, WMO, Geneva.
- Hagemann, S. and L. Dümenil, 1997, The HD model: a parameterization of lateral discharge for the global scale. Preprint Volume, 13th Conference on Hydrology, 2-7 February 1997, Long Beach, CA.
- Hagemann, S. and L. Dümenil, 1997, Comparison of two global wetlands datasets. In: G. Cecchi, E.T. Engman and E. Zilioli (Eds.), Earth Surface Remote Sensing. Proceedings of SPIE, Vol. 3222, 193-200.
- Schulz, J.-P., L. Dümenil and J. Polcher, 1997, Two land-surface schemes implemented in the same GCM. In: A. Staniforth (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 25, WMO/TD No. 792, WMO, Geneva.
- Dümenil, L., 1998: Portrayal of the Indian summer monsoon in the land-atmosphere-ocean system of a coupled GCM. Max-Planck-Institut für Meteorologie Report No. 271, Hamburg, 40pp.
- Dümenil, L. and H.-S. Bauer, 1998, The tropical easterly jet in a hierarchy of MPI models and in the re-analyses. Max-Planck-Institut für Meteorologie Report No. 247, Hamburg.
- Dümenil, L., H.-S. Bauer and S. Rehfeld, 1998, The tropical easterly jet in the ECHAM atmospheric general circulation models of the MPI. In: A. Staniforth (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 27, WMO/TD No.865, WMO, Geneva.
- Dümenil, L. and S. Ließ, 1998, Impacts of deforestation and afforestation on the climate of the Mediterranean. In: A. Staniforth (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 27, WMO/TD No.865, WMO, Geneva.
- Arpe, K., L. Dümenil and M. Giorgetta, 1998, Impacts of different forcings on the precipitation over India. Proceedings of the Twenty-Second Annual Climate Diagnostics and Prediction Workshop, Berkeley, CA, 6-10 October 1997.
- Hagemann, S. and L. Dümenil, 1998, Application of a grid-scale lateral discharge model in the BALTEX-region. Max-Planck-Institut für Meteorologie Report No. 278, Hamburg, 21pp.
- Hagemann, S. and L. Dümenil, 1998, Documentation for the Hydrological Discharge Model. DKRZ Technical Report No. 17, Deutsches Klimarechenzentrum, Hamburg, 42pp.
- Hagemann, S. and L. Dümenil, 1998, The usage of a global discharge model to compare two global wetlands datasets. In: A. Staniforth (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 27, WMO/TD No. 865, WMO, Geneva.
- Schulz, J.-P., L. Dümenil and J. Polcher, 1998, On the Asian monsoon in an ECHAM4 GCM simulation. In: A. Staniforth (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 27, WMO/TD No.865, WMO, Geneva.

- Dümenil, L. and S. Ließ, 1999, Impacts of deforestation and afforestation on the climate in the Mediterranean region as simulated by the MPI atmospheric GCM. Max-Planck-Institut für Meteorologie Report No. 301, Hamburg, 25pp.
- Hagemann, S., M. Botzet, L. Dümenil and B. Machenhauer, 1999, Preparing a new global high resolution dataset of land surface characteristics depending on land use and vegetation. In: H. Ritchie (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 28, WMO/TD No.942, WMO, Geneva.
- Hagemann, S., M. Botzet, L. Dümenil and B. Machenhauer, 1999, Derivation of global GCM boundary conditions from 1 km land use satellite data. Max-Planck-Institut für Meteorologie Report No. 289, Hamburg, 34pp.
- Ließ, S. and L. Dümenil, 1999. The response of ECHAM to the land-surface change. In: Polcher, J. et al., Final Report for EU contract "Land-surface processes and climate response", LMD, Paris, 235pp.
- Schulz, J.-P., L. Dümenil and J. Polcher, 1999, Impact of different numerical coupling techniques between the surface and the atmosphere in a GCM. In: H. Ritchie (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 28, WMO/TD No.942, WMO, Geneva.
- Schulz, J.-P., L. Dümenil and J. Polcher, 1999, The impact of two different land-surface coupling techniques in a single column version of the ECHAM4 atmospheric model. Max-Planck-Institut für Meteorologie Report No. 297, Hamburg, 32pp.
- Dümenil Gates, L., S. Hagemann and C. Golz, 2000, Observed historical discharge data from major rivers for climate model validation, Max-Planck-Institut für Meteorologie Report No. 307, Hamburg, 93pp.
- Hagemann, S., M. Botzet, L. Dümenil Gates and B. Machenhauer, 2000, Impact of new global land surface parameter fields on ECHAM T42 climate simulations. In: H. Ritchie (Ed.), Research Activities in Atmospheric and Oceanic Modelling. Report No. 30, WMO/TD No. 987, WMO, Geneva.
- Aldrian, E., L. Dümenil Gates, F. H. Widodo, 2001, Variability of Indonesian Rainfall and the Influence of ENSO and resolution in ECHAM4 simulations and in the reanalyses, Max Planck-Institut für Meteorologie Report No. 346, Hamburg, 30pp.