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## CURRICULUM VITAE

### Christiane Jablonowski

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#### RESEARCH INTERESTS AND CURRENT PROJECTS

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- Adaptive Mesh Refinement (AMR) techniques for Atmospheric General Circulation Models (GCMs)
- Development of test cases for dynamical cores of GCMs, international model intercomparisons
- Modern numerical methods and computational grids for dynamical cores of GCMs
- Design of future generation ‘seamless’ weather and climate models for multi-scale climate change applications (global to regional scale)
- Cubed-sphere computational grids: AMR library Chombo and high-order finite volume techniques, Riemann solvers
- Subgrid-scale processes in the dynamical cores of GCMs: The impact of diffusion, filters and fixers on climate simulations
- Idealized simulations of the Quasi-Biennial Oscillation (QBO), stratospheric dynamics
- Tropical cyclones in the Atlantic Ocean Basin, cyclogenesis processes and global climate change
- Atmospheric dynamics
- Parallel and high-performance computing, petascale computing
- Global interoperability of models and data: Computational tools for climate modeling, Earth System Curator (model metadata), frameworks

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#### EDUCATION

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|---|---|
| <b>Ph.D. in Atmospheric and Space Sciences and Scientific Computing</b><br>University of Michigan, Ann Arbor, Michigan<br>Department of Atmospheric, Oceanic & Space Sciences   | Sep. 1998 – Feb. 2004<br>graduation: April 2004 |
| <b>Diplom-Meteorologin</b> (Diploma degree in Meteorology), comparable to<br><b>Master of Science in Meteorology</b><br>University of Bonn, Germany<br>Department of Meteorology<br>Minors: Geophysics, Physical Chemistry                              | Oct. 1994 – Aug. 1998<br>graduation: Nov. 1998  |
| <b>Vordiplom in Physik</b> (First diploma degree in Physics), comparable to<br><b>Bachelor of Science in Physics</b><br>Aachen University of Technology (RWTH Aachen), Germany<br>Department of Physics<br>Minors: Computer Science & Numerical Methods | Oct. 1992 – Sep. 1994<br>graduation: Sep. 1994  |

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**PROFESSIONAL EXPERIENCE**


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| <b>Assistant Professor</b><br><b>University of Michigan, Ann Arbor, Michigan</b><br>Department of Atmospheric, Oceanic & Space Sciences (AOSS)   | Sep. 2006 - present                            |
| <b>Visiting Research Associate</b><br><b>Geophysical Fluid Dynamics Laboratory (GFDL) &amp; Princeton University, Princeton, New Jersey</b><br>Sponsored by: University of Michigan, Ann Arbor, Michigan, AOSS                                   | Mar. 2006 – Aug. 2006                          |
| <b>Postdoctoral Researcher</b><br><b>National Center for Atmospheric Research (NCAR), Boulder, Colorado</b><br>Advanced Study Program (ASP) and Scientific Computing Division (SCD)  | Feb. 2004 – Feb. 2006                          |
| <b>Graduate Student Research Assistant</b><br><b>University of Michigan, Ann Arbor, Michigan</b><br>Department of Atmospheric, Oceanic & Space Sciences  | May 1999 – Dec. 2003                           |
| <b>Visiting Scientist</b><br><b>National Center for Atmospheric Research, Boulder, Colorado</b><br>Climate and Global Dynamics Division, Climate Modeling Section  | Jun. 2000 – Aug. 2000                          |
| <b>Graduate Student Instructor</b><br><b>University of Michigan, Ann Arbor, Michigan</b><br>Department of Atmospheric, Oceanic & Space Sciences  | Sep. 1998 – Apr. 1999                          |
| <b>Graduate Student Research Assistant</b><br><b>German National Research Center for Information Technology (GMD)</b><br>(today's Fraunhofer Institute), <b>Sankt Augustin, Germany</b><br>GMD Institute for Algorithms and Scientific Computing | Feb. 1994 – Oct. 1997<br>Mar. 1998 – Sep. 1998 |
| <b>Graduate Student Visitor</b><br><b>German Weather Service (DWD), Offenbach, Germany</b><br>Research and Development Division  | August 1997                                    |
| <b>Consultant</b><br><b>European Centre for Medium-Range Weather Forecasts, Reading, England</b><br>Numerical Aspects Division   | Nov. 1997 – Jan. 1998                          |
| <b>Siemens Nixdorf Information Systems, Cologne, Germany</b><br>Computer Consultant (part-time) for vector and parallel computing  | Jul. 1996 – Mar. 1998                          |
| <b>Mathematical-Technical Assistant (3-year training)</b><br><b>Aachen University of Technology (RWTH Aachen), Computing Center</b><br>Team: Vector computers and parallel computing   | Sep. 1989 – Aug. 1992                          |

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**HONORS & AWARDS**


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|---|-----------------------|
| <b>Presidential Early Career Award for Scientists and Engineers (PECASE)</b>  | Sep. 2011             |
| <b>Department of Energy Early Career Award</b>  | Apr. 2010             |
| <b>University of Michigan, College of Engineering Distinguished Achievement Award (AOSS department)</b>   | Mar. 2010             |
| <b>Keith Runcorn Travel Award for Non-Europeans (KRTA)</b> for the EGU conference in Vienna, April 2005   | Jan. 17, 2005         |
| <b>Distinguished Achievement Award</b> , University of Michigan, College of Engineering, Ann Arbor, Michigan  | Mar. 14, 2004         |
| <b>NCAR Postdoctoral Fellowship</b> , Advanced Study Program and Scientific Computing Division, National Center for Atmospheric Research, Boulder, CO   | Feb. 2004 – Feb. 2006 |
| <b>Travel Stipend:</b> Invitation to the Summer School MAMAOS 'Modern Applied Mathematics for the Atmospheric and Oceanic Sciences', University of California, Los Angeles  | Jul. 13-27, 2003      |
| <b>NASA Earth System Science Graduate Student Fellowship</b>  | Sep. 2000 – Aug. 2003 |
| <b>Travel Stipend:</b> Invitation to a workshop about the Scientific Computing Toolkit ACTS: 'How can ACTS work for you?', Lawrence Berkeley National Laboratory, California  | Sep. 28-30, 2000      |
| <b>Winner</b> of the open competition 'Best Projects at the German National Research Center for Information Technology in 1999 (GMD, St. Augustin, Germany) Category 'Diploma Thesis': <b>Award 'Best Diploma Thesis at GMD in 1999'</b>      | Oct. 21, 1999         |
| <b>Fellowship</b> for a three-month stay at the <b>National Center for Atmospheric Research</b> , Boulder, CO, awarded by the German National Research Center for Information Technology (today: Fraunhofer Institute), St. Augustin, Germany | Oct. 21, 1999         |

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**TEACHING**


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**UM university courses:**

- AOSS 605, section 5: **The Art of Climate Modeling** (Fall 2010), graduate course
- AOSS 451: **Atmospheric Dynamics I** (Fall 2007, 2008, 2009), senior-level/graduate course
- AOSS 321: **Earth System Dynamics** (Winter 2007, 2008, 2009, 2010, 2011), undergraduate course for students with various backgrounds, co-taught with the UM Department of Geological Sciences
- AOSS 499: Directed study for undergraduates

AOSS 701: Directed study for graduate students:

Guest lectures: AOSS 470: **Solar Terrestrial Relations**, Lectures on the Climate System and the Sun-Climate Connection on March/15/2004 and March/17/2004

Guest lecture AOSS 475 **Earth-Atmosphere-Ocean Interactions**, 'Introduction to Climate Modeling', Feb/1/2002

**Postdoctoral fellows (advisees):**

**Dr. Kevin A. Reed**, University of Michigan, May 2012 – August 2012

**Dr. Paul A. Ullrich**, University of Michigan, May 2011 – August 2012

**Dr. James Kent**, University of Exeter, U.K., May 2010 - current

**Ph.D. students:**

**Paul A. Ullrich**, Ph.D. University of Michigan, graduation in May 2011. Chair.

**Kevin Reed**, Ph.D. candidate, University of Michigan, graduation in January 2012. Chair.

**Weiye Yao**, Ph.D. candidate, University of Michigan, expected to graduate in 2014. Chair.

**Colin Zarzycki**, Ph.D. pre-candidate, University of Michigan, expected to become a Ph.D. candidate in Atmospheric, Oceanic & Space Sciences in May 2012, expected to graduate in 2014. Chair.

**Jared Whitehead**, Ph.D. candidate, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), graduation in Dec. 2011, Co-advisor together with Prof. Richard B. Rood, UM.

**Peter Bosler**, Ph.D. candidate, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), expected to graduate in April 2013. Co-Chair together with Prof. Robert Krasny, UM.

**M.S. students:**

**Catalina Oaida**, SGUS student (2008-2009), University of Michigan, graduation with SGUS Master's degree in Atmospheric, Oceanic & Space Science, May 2009.

**Lauren C. Anderson**, M.S. student in the Department of Applied Mathematics at the University of Colorado, Boulder. External advisor from Feb. 2006 - June 2007. Graduated in the summer of 2007.

**Preliminary examination committees:**

**Lei Wang**, Ph.D. candidate, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), preliminary examination committee member, 12/6/2006

**Archer L. Batcheller**, Ph.D. candidate, University of Michigan, School of Information, external committee member, 2/25/2010

**Peter Bosler**, Ph.D. candidate, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), 7/31/2010, expected to graduate in 2012. Co-Chair.

**Ph.D. dissertation committees:**

**Lei Wang**, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), Ph.D. committee member, May 5, 2010

**Amanda Brecht**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D.

committee member, 2/18/2011

**Paul A. Ullrich**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D. committee chair, 4/19/2011

**Gerardo Hernandez**, University of Michigan, Department of Mathematics, external Ph.D. committee member, 4/21/2011

**Archer L. Batcheller**, University of Michigan, School of Information, external Ph.D. committee member, 4/21/2011

**Jared Whitehead**, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), Ph.D. committee member, 11/30/2011

### Undergraduate research projects:

**Diana Thatcher** 9/1/2011 – 8/30/2012

Diana's research focuses on the development of a moist variant of the Held-Suarez test. She uses NCAR's Community Atmosphere Model to evaluate the characteristics of the test.

**Michael Glotter**, 9/1/2009 – 5/31/2010

Directed Study AOSS 499: Michael developed and tested a shallow water test case that simulates merging vortices. The test mimics the behavior of tropical cyclones.

**Ghassan Alaka**, 1/1/2008 – 4/30/2008

Directed Study AOSS 499: Gus developed wavenumber-frequency analysis techniques to detect tropical stratospheric waves in idealized dynamical core simulations of atmospheric GCMs.

**Ilissa Ocko**, Marian Sarah Parker Scholar (2007), 9/1/2007 – 4/30/2008

Directed Study AOSS 499: Ilissa's research addressed tropical dynamics in the stratosphere, especially the assessment of the so-called Transformed-Eulerian Mean Equations in idealized dynamical core simulations of atmospheric GCMs.

### Summer schools:

**Future-Generation Non-Hydrostatic Weather and Climate Models**, lead-organizer and lecturer

Two-week Summer School and Model Intercomparison Project (July 30 – August/10, 2012)

National Center for Atmospheric Research, Boulder, CO

Organizing and support team: Paul A. Ullrich (University of Michigan), James Kent (University of Michigan), Peter H. Lauritzen (NCAR), Mark Taylor (Sandia National Laboratories), Ram D. Nair (NCAR), Kevin Reed (University of Michigan)

Local NCAR support: Computational & Information Systems Laboratory (CISL).

The objectives of the summer school are (1) to teach a group of about 30 multi-disciplinary students how today's and future non-hydrostatic atmospheric models are or need to be designed and built, (2) to invite about 10 dynamical core modeling groups to NCAR for a hands-on student-run model intercomparison project, (3) to establish new non-hydrostatic dynamical core and tropical cyclone test cases in the community and (4) to invite keynote speakers to NCAR that give lectures on modern numerical techniques, uncertainty quantification, the physics-dynamics coupling, simple moisture feedbacks, and innovative computational aspects such as variable-resolution grids. Such an exciting and energetic learning opportunity cannot be provided at any single university. The format will mimic our highly successful 2008 NCAR Advanced Study Program Colloquium (see also below or <http://www.asp.ucar.edu/colloquium/2008/>). The summer school will include morning lectures and afternoon hands-on model intercomparison sessions in partnership with a modeling mentor. The latter will enable the students to gain an in-depth understanding of the modeling

choices available to them in one particular model. Such small-team sessions are lively, exciting and relevant, and guarantee the direct scientific feedback about the model results. The students and mentors will share and discuss the results immediately through a novel cyber-infrastructure tool that will be prototyped during the summer school. The 2012 NCAR summer school and model intercomparison project have been endorsed by the World Meteorological Organization (WMO) Working Group on Numerical Experimentation (WGNE).

**Numerical Techniques for Global Atmospheric Models**, co-organizer and lecturer (3 lectures)

NCAR Advanced Study Program (ASP) Summer Colloquium (June 1-13, 2008)

National Center for Atmospheric Research, Boulder, CO

Organized by Peter H. Lauritzen (NCAR), Christiane Jablonowski (University of Michigan), Mark Taylor (Sandia National Laboratories), Ram D. Nair (NCAR)

The two-week summer colloquium titled ‘Numerical Techniques for Global Atmospheric Models’ surveyed the latest developments in numerical methods for dynamical cores of atmospheric GCMs. The format of the summer school resembled our planned 2012 event (see above). However, in 2008 the science focus was different and focused on numerical approaches to modeling the fluid flow of the dry atmosphere with hydrostatic models. The 2008 workshop has had long lasting implications and impacts: (1) the participants of the colloquium built an online Facebook peer-network that has also been used after the colloquium, (2) the Springer Lecture Notes publisher approached the organizing team that has now edited and authored a Lecture Notes Book (Lauritzen et al. 2011), (3) the dynamical core intercomparison data (1.3 TeraByte) are public and disseminated through the Earth System Grid (soon through a NOAA gateway), (4) selected science results are published in the reviewed literature, (5) the test cases are becoming a community standard. The latter two have truly integrated science and education. We envision a similar outcome for the 2012 event. The 2008 summer school got excellent student reviews (available upon request) and has a high visibility in the modeling community.

**Tutorials and short courses:**

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC’10 in New Orleans, LA, USA, November 14, 2010 (> 80 participants)

**On the Design of Dynamical Cores for Atmospheric General Circulation Models (GCMs): Numerical and Scientific Challenges**, C. Jablonowski, 90-minute tutorial at the NSF Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, USA, March 9, 2010

**On the Design of Dynamical Cores for Atmospheric General Circulation Models (GCMs): Physical and Computational Challenges**, C. Jablonowski, Two 90-minute tutorials at the NSF Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, USA, March 10 & 16, 2010

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC’09 in Portland, OR, USA, November 15, 2009 (> 80 participants)

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC’08 in Austin, TX, USA, November 16, 2008 (> 100 participants)

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC’07 in Reno, NV, USA, November 11, 2007 (> 100 participants)

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC’06 in Tampa, FL, USA, November 12, 2006 ( $\approx$  100 participants)

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC’05 in Seattle, WA, USA, November 12, 2005 ( $\approx$  80 participants)

**The Lin-Rood Finite Volume (FV) Dynamical Core: Tutorial**, National Center for Atmospheric Research (NCAR), May/31/2005 ( $\approx$  20 participants)

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC'04 in Pittsburgh, PA, USA, November 07, 2004

**Introduction to Effective Parallel Computing**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC'2001 in Denver, Colorado, USA, November 11, 2001

**Introduction to Effective Parallel Computing**, Quentin Stout and Christiane Jablonowski, Half-day tutorial at the International Parallel and Distributed Processing Symposium 2001 (IPDPS 2001) in San Francisco, California, USA, April 23, 01

**Introduction to Effective Parallel Computing**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at the SuperComputing Conference SC'2000 in Dallas, Texas, USA, November 5, 2000

### Graduate Student Instructor (GSI) position:

**Graduate Student Teaching Assistant** for the UM courses **Introduction to Global Change I & II** (AOSS 171 & AOSS 172), September 1998 – April 1999

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## STUDENT HONORS, AWARDS, FELLOWSHIPS & INTERNSHIPS

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| <b>NCAR Postdoctoral Fellowship</b> , Advanced Study Program (ASP)<br>National Center for Atmospheric Research, Boulder, CO<br>Kevin Reed   | starting in October 2013 |
| <b>AGU Congressional Science Fellowship</b> , Advanced Study Program (ASP)<br>Kevin Reed  | Sep. 2012 – Sep. 2013    |
| <b>NSF Graduate Fellowship</b><br>former undergraduate student: Michael Glotter (now University of Chicago)   | Mar. 2012                |
| <b>NSF Mathematical Sciences Postdoctoral Research Fellowship (MSPRF)</b><br>Jared Whitehead (declined)   | Jan. 2012                |
| <b>Travel award: 23rd AMS Conference on Climate Variability and Change</b><br>New Orleans, LA, USA<br>Kevin Reed  | Jan. 22-26, 2012         |
| <b>American Geophysical Union (AGU) Outstanding Student Paper Award</b><br>Reed, K. A. and C. Jablonowski. <i>Assessing the Significance of Varying AGCM Physics Packages on Idealized Tropical Cyclone Simulations</i> ,<br>Poster presentation at the AGU Fall Meeting 2010, San Francisco, CA, USA, December 13-17, 2010 | Mar. 31, 2011            |
| <b>American Geophysical Union (AGU) Outstanding Student Paper Award</b><br>Ullrich, P. A. and C. Jablonowski, <i>A look at high-order Finite-Volume schemes for simulating atmospheric flows</i> ,<br>Oral presentation at the AGU Fall Meeting 2010, San Francisco, CA, USA, December 13-17, 2010                          | Mar. 31, 2011            |
| <b>CoE Graduate Distinguished Achievement Award, University of Michigan</b><br>Kevin Reed   | Mar. 20, 2011            |

- Travel award: WAVACS-COST Winter School** Feb. 6-12, 2011  
*Water vapour in the climate system*, Venice, Italy  
Kevin Reed
- 1<sup>st</sup> place (poster presentation) at the UM 2010 CoE Engineering Graduate Symposium**, Ann Arbor, MI, category *Atmospheric, Oceanic & Space Sciences*: Nov. 12, 2010  
Reed, K. A. and C. Jablonowski, *Evaluating the Impact of the CAM 5 Dynamical Core in Idealized Tropical Cyclone Simulations*
- Finalist: Outstanding Ph.D. Student Research Award** Nov. 12, 2010  
**at the UM 2010 CoE Engineering Graduate Symposium**, Ann Arbor, MI,  
Ullrich, P. A. and C. Jablonowski, *High-order finite-volume schemes for simulating atmospheric flows*
- College of Engineering Dean's Fellowship, University of Michigan** Sep. 2010 – Apr. 2011  
Colin Zarzycki
- DoE Global Change Education Program (GCEP)** Sep. 2010 – Aug. 2012  
**Graduate Research Environmental Fellowship (GREF)**  
Kevin Reed
- Rackham Predoctoral Fellowship, University of Michigan** May 2010 – Apr. 2011  
Paul Ullrich
- Travel award: Summer School on Atmospheric Modeling (SSAM)** Jul. 19-21, 2010  
Boulder, CO, USA, *sponsored by NOAA's Global Interoperability Program and The Earth System Research Laboratory*, in partnership with the *Center for Multiscale Modeling of Atmospheric Processes (CMMAP), NCAR and NCEP*  
Weiye Yao
- Travel award: NSF Institute for Pure and Applied Mathematics (IPAM)** Apr. 2010  
Los Angeles, CA, USA, Invited participant of the IPAM Long Program  
*Model and Data Hierarchies for Simulating and Understanding Climate*  
Kevin Reed
- Travel award: NSF Institute for Pure and Applied Mathematics (IPAM)** Apr. 12-16, 2010  
Los Angeles, CA, USA, Invited participant of the IPAM Workshop  
*Workshop II: Numerical Hierarchies for Climate Modeling*  
Paul Ullrich
- 2<sup>nd</sup> place (poster presentation) at the 2010 Michigan Geophysical Union (MGU) Meeting**, Ann Arbor, MI Mar. 26, 2010  
Whitehead, J., C. Jablonowski and R. B. Rood  
*Divergence Damping: Is Additional Diffusion 'Good' for Stability?*
- AMS Summer Policy Colloquium** May 31 – Jun. 9, 2009  
American Meteorological Society (AMS), Washington, DC, USA  
Invited Participant: Kevin Reed

**1<sup>st</sup> place (poster presentation) and 2<sup>nd</sup> place (oral presentation)** at the UM 2008 CoE Engineering Graduate Symposium, Nov. 13, 2008  
 category *Civil, Environmental and Atmospheric Sciences*:  
 Ullrich, P. A., P. H. Lauritzen and C. Jablonowski,  
*GECORE: A New Geometrically Exact Remapping Scheme on the Sphere*

**Summer Internship in Parallel Computational Science (SIParCS)** Jun 2008 – Aug. 2008  
 National Center for Atmospheric Research (NCAR), Boulder, CO, USA  
 Computational & Information Systems Laboratory (CISL)  
 Paul Ullrich

**NCAR Advanced Study Program Summer Colloquium** Jun. 2-13, 2008  
*Numerical Techniques for Global Atmospheric Models*, Boulder, CO, USA  
 Invited Participant: Paul Ullrich

**College of Engineering Dean's Fellowship, University of Michigan** Sep. 2007 – Apr. 2008  
 Paul Ullrich

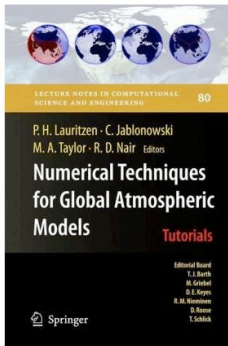
## PUBLICATIONS

### Refereed Journal Papers and Book Chapters

- Chen, X., N. Andronova, B. Van Leer, J. E. Penner, J. P. Boyd, C. Jablonowski and S.-J. Lin (2012), **A Control-Volume Model of the Compressible Euler Equations with a Vertical Lagrangian Coordinate**, *Mon. Wea. Rev.*, in review
- Ullrich, P. A., C. Jablonowski and P. H. Lauritzen (2012), **A high-order 'incremental-remap'-based semi-Lagrangian shallow water model**. *J. Comput. Phys.*, in review
- Ullrich, P. A., P. H. Lauritzen and C. Jablonowski (2012), **Some considerations for high-order 'incremental remap'-based transport schemes: edges, reconstructions and area integration**, *International Journal for Numerical Methods in Fluids*, in revision
- Reed, K. A., C. Jablonowski and M. A. Taylor (2012), **Tropical Cyclones in the Spectral Element Configuration of the Community Atmosphere Model**, *Atm. Sci. Lett.*, revised
- Ullrich, P. A. and C. Jablonowski (2012b), **MCore: A Non-hydrostatic Atmospheric Dynamical Core Utilizing High-Order Finite-Volume Methods**, *J. Comput. Phys.*, in press
- Kent, J., C. Jablonowski, J. P. Whitehead and R. B. Rood (2012), **Assessing Tracer Transport Algorithms and the Impact of Vertical Resolution in a Finite-Volume Dynamical Core**, *Mon. Wea. Rev.*, Vol. 140, 1620-1638
- Reed, K. A. and C. Jablonowski (2012), **Idealized tropical cyclone simulations of intermediate complexity: a test case for AGCMs**, *J. Adv. Model. Earth Syst.*, *J. Adv. Model. Earth Syst.*, Vol. 4, M04001, doi:10.1029/2011MS000099
- Ullrich, P. A. and C. Jablonowski (2012a), **Operator-Split Runge-Kutta-Rosenbrock (RKR) Methods for Nonhydrostatic Atmospheric Models**, *Mon. Wea. Rev.*, Vol. 140, 1257-1284
- Whitehead, J., C. Jablonowski, R. B. Rood and P. H. Lauritzen (2011), **A stability analysis of divergence damping on a latitude-longitude grid**, *Mon. Wea. Rev.*, Vol. 139(9), 2976-2993
- Reed, K. A. and C. Jablonowski (2011c), **Assessing the Uncertainty of Tropical Cyclone Simulations in**

- NCAR's Community Atmosphere Model**, *J. Adv. Model. Earth Syst.*, Vol. 3, Art. 2011MS000076, 16 pp.
- Reed, K. A. and C. Jablonowski (2011b), **Impact of physical parameterizations on idealized tropical cyclones in the Community Atmosphere Model**, *Geophys. Res. Lett.*, Vol. 38, L04805
- Jablonowski, C. and D. L. Williamson (2011), **The Pros and Cons of Diffusion, Filters and Fixers in Atmospheric General Circulation Models**, In: Lauritzen, P. H., C. Jablonowski, M. A. Taylor and R. D. Nair (Eds.), *Numerical Techniques for Global Atmospheric Models, Lecture Notes in Computational Science and Engineering*, Springer, Vol. 80, 381-493
- Reed, K. A. and C. Jablonowski (2011a), **An Analytic Vortex Initialization Technique for Idealized Tropical Cyclone Studies in AGCMs**, *Mon. Wea. Rev.*, Vol. 139, 689-710
- Ullrich, P. A. and C. Jablonowski (2011), **An Analysis of Finite-Volume Methods for Smooth Problems on Refined Grids**, *J. Comput. Phys.*, Vol. 230, 706-725
- Ullrich, P. A., C. Jablonowski and B. van Leer (2010), **Riemann-solver-based high-order finite-volume models for the shallow-water equations on the sphere**, *J. Comput. Phys.*, Vol. 229, 6104-6134
- Lauritzen, P. H., C. Jablonowski, M. A. Taylor and R. D. Nair (2010), **Rotated versions of the Jablonowski steady-state and baroclinic wave test cases: A dynamical core intercomparison**, *J. Adv. Model. Earth Syst.*, Vol. 2, Art. #15, 34 pp.
- Jablonowski, C., R. C. Oehmke and Q. F. Stout (2009): **Block-structured Adaptive Meshes and Reduced Grids for Atmospheric General Circulation Models**, *Philosophical Transactions of the Royal Society A*, Vol. 367, 4497-4522
- Ullrich, P. A., P. H. Lauritzen, C. Jablonowski (2009), **Geometrically Exact Conservative Remapping (GECORE): Regular latitude-longitude and cubed-sphere grids**, *Mon. Wea. Rev.*, Vol. 137, 1721-1741
- Williamson, D. L., J. Olson and C. Jablonowski (2009), **Two dynamical core formulation flaws exposed by a baroclinic instability test case**, *Mon. Wea. Rev.*, Vol. 137, 790-796
- St-Cyr, A., C. Jablonowski, J. M. Dennis, H. M. Tuf0 and S. J. Thomas (2008), **A Comparison of Two Shallow Water Models with Non-Conforming Adaptive Grids**, *Mon. Wea. Rev.*, Vol. 136, 1898-1922
- Nair, R. D. and C. Jablonowski (2008), **Moving Vortices on the Sphere: A Test Case for Horizontal Advection Problems**, *Mon. Wea. Rev.*, Vol. 136, 699-711
- Jablonowski, C., M. Herzog, J. E. Penner, R. C. Oehmke, Q. F. Stout, B. van Leer and K. G. Powell (2006), **Block-Structured Adaptive Grids on the Sphere: Advection Experiments**, *Mon. Wea. Rev.*, Vol. 134, 3691-3713
- Jablonowski, C. and D. L. Williamson (2006), **A Baroclinic Instability Test Case for Atmospheric Model Dynamical Cores**, *Quart. J. Roy. Met. Soc.*, Vol. 132, October Part C, No. 621C, 2943-2975
- Broeker, O., K. Cassirer, R. Hess, C. Jablonowski, W. Joppich and S. Pott (1998), **Activities on Weather Prediction on Highly Parallel Systems**, *SAMS (Systems Analysis Modelling Simulation, now merged with International Journal of Systems Science)*, Vol. 32, pp. 19-29

## Edited books



Lauritzen, P. H., C. Jablonowski, M. A. Taylor and R. D. Nair (Editors), 2011, **Numerical Techniques for Global Atmospheric Models**. Lecture Notes in Computational Science and Engineering, Springer, Vol. 80, 556 pp.

## Refereed Conference Proceedings

Zarzycki, C. and C. Jablonowski (2012): **Using Variable Resolution Meshes to Model Tropical Cyclones in NCAR'S CAM General Circulation Model**, 30<sup>th</sup> AMS Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, USA, April 15-20, 2012, available online at <http://ams.confex.com/ams/30Hurricane/webprogram/meeting.html#Tuesday>

Penner, J. E., N. Andronova, R. C. Oehmke, J. Brown Q. F. Stout, C. Jablonowski, B. van Leer, K. G. Powell and M. Herzog (2007): **Three Dimensional Adaptive Mesh Refinement on a Spherical Shell for Atmospheric Models with Lagrangian Coordinates**, Journal of Physics: Conference Series, 78, 012072, available online <http://www.iop.org/EJ/abstract/1742-6596/78/1/012072>

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Jablonowski, C., M. Herzog, R. C. Oehmke, J. E. Penner, Q. F. Stout, and B. van Leer (2004), **Adaptive Grids for Weather and Climate Models**, ECMWF Seminar Proceedings on 'Recent developments in numerical methods for atmospheric and ocean modeling', Reading, UK, 6-10 September 2004, pp. 233-250, available online at <http://www.ecmwf.int/publications/library/do/references/list/17334>

Penner, J. E., C. Jablonowski, K.E. Grant and C.C. Chuang (2000), **An Examination of the Effects of Aerosols on the Reflected Radiation by Clouds**, Tenth ARM Science Team Meeting Proceedings, San Antonio, Texas, March 13-17, 2000

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Jablonowski, C., P. H. Lauritzen, R. D. Nair and M. Taylor (2008), **Idealized test cases for the dynamical cores of Atmospheric General Circulation Models: A proposal for the NCAR ASP 2008 summer colloquium**, download from <http://www.umich.edu/~cjablono/cv.html>

Jablonowski, C., and D. L. Williamson (2006), **A Baroclinic Wave Test Case for Dynamical Cores of General Circulation Models: Model Intercomparisons**, NCAR Technical Note NCAR/TN-469+STR, Boulder, CO, 89 pp.

Jablonowski, C. (1998), **Test of the Dynamical Core of the new DWD Global Model GME**, in: Research Activities in Atmospheric and Oceanic Modelling, CAS/JSC Working Group on Numerical Experimentation, WMO/TD-No. 865, Report No. 27, January 1998, pp. 3.12-3.13

Cassirer, K., R. Hess, C. Jablonowski and W. Joppich (1996), **The Shallow Water Test Cases for a Global Model with Documentation of the Results**, GMD - Forschungszentrum Informationstechnik GmbH, Technical Report No. 999, June 1996, Sankt Augustin, Germany, 85 pp.

### Dissertation and Thesis

Jablonowski, C. (2004), **Adaptive Grids in Weather and Climate Modeling**, Ph.D. dissertation, University of Michigan, Ann Arbor, Department of Atmospheric, Oceanic & Space Sciences, 292 pp.

Jablonowski, C. (1998), **Test der Dynamik zweier globaler Wettervorhersagemodelle des Deutschen Wetterdienstes: Der Held-Suarez Test**, Diploma Thesis (Master Thesis), Department of Meteorology at the University of Bonn, Germany, September 1998, 151 pp. (in German)

### AGU/EGU published conference abstracts

Lauritzen, P. H., W. C. Skamarock, M. J. Prather, M. A. Taylor and C. Jablonowski (2012), **Assessing accuracy of transport schemes in global climate-weather models**, Geophysical Research Abstracts, Vol. 14, EGU2012-12965, EGU General Assembly 2012

Reed, K. A., M. F. Wehner and C. Jablonowski (2012), **Towards the Direct Simulation of Tropical Cyclones in the High-Resolution Community Atmosphere Model**, Geophysical Research Abstracts, Vol. 14, EGU2012-242, EGU General Assembly 2012

Ullrich, P. A. and C. Jablonowski (2011), **MCore: A High-Order Finite-Volume Dynamical Core for Atmospheric General Circulation Models**. American Geophysical Union (AGU) Fall Meeting 2011, Abstract A41G-07

Reed, K. A. and C. Jablonowski (2011), **Idealized Tropical Cyclone Simulations of Intermediate Complexity: A Test Case for AGCMs**. AGU Fall Meeting 2011, Abstract GC11B-0921

Zarzycki, C. M. and C. Jablonowski (2011), **Modeling Tropical Cyclones in NCAR's General Circulation Model with Variable-Resolution Meshes**. AGU Fall Meeting 2011, Abstract A32D-05

Yao, W. and C. Jablonowski (2011), **Idealized Simulations of the Quasi-Biennial Oscillation With Different GCM Dynamical Cores: The Role of Parameterized Gravity Waves**. AGU Fall Meeting 2011, Abstract A51A-0216

Fiorella, R. P., C. J. Poulsen, C. Jablonowski and C. M. Bitz (2011), **Resistance to Snowball Earth Initiation in the CAM3.1 Slab Ocean Model**. AGU Fall Meeting 2011, Abstract PP13B-1835

Kent, J., J. Whitehead, C. Jablonowski and R. B. Rood (2011), **Assessing the Accuracy of Tracer Transport Schemes in the Dynamical Cores of General Circulation Models**. AGU Fall Meeting 2011, Abstract A51A-0225

Reed, K. A. and C. Jablonowski (2010), **Assessing the Significance of Varying AGCM Physics Packages on Idealized Tropical Cyclone Simulations**, AGU Fall Meeting 2010, Abstract A23A-0214

Ullrich, P. A. and C. Jablonowski (2010), **A look at high-order Finite-Volume schemes for simulating atmospheric flows**, AGU, Fall Meeting 2010, Abstract A41G-07

Jablonowski, C. and K. A. Reed (2010), **Idealized Tropical Cyclone Simulations of Intermediate**

**Complexity: A Test Case for Atmospheric GCMs**, AGU, Fall Meeting 2010, Abstract A41G-06

Jablonowski, C., P. H. Lauritzen, M. A. Taylor and R. D. Nair (2008), **An Intercomparison of 10 Atmospheric Model Dynamical Cores**, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract A33A-0214

Reed, K. A. and C. Jablonowski (2008), **Idealized Tropical Cyclones in Atmospheric General Circulation Models**, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract A33A-0215

Lauritzen, P. H. and C. Jablonowski (2008), **A rotated version of the Jablonowski-Williamson baroclinic wave test case**, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract A33A-0212

Oehmke, R., D. Vandenberg, N. Andronova, J. Penner, Q. Stout, V. Zubov and C. Jablonowski (2008), **3-D grid refinement using the University of Michigan adaptive mesh library for a pure advective test**, Eos Trans. AGU, 89(23), Jt. Assem. Suppl., Abstract IN33A-06

Jablonowski, C. (2006), **A Proposed Test Suite for Atmospheric Model Dynamical Cores**, Eos Trans. AGU, 87(52), Fall Meet. Suppl., Abstract A41D-0062

Jablonowski, C., M. Herzog, R. C. Oehmke, J. E. Penner, Q. F. Stout and B. van Leer (2005), **Adaptive Grids for Future Weather Prediction Models**, Geophysical Research Abstracts, Vol. 7, 00134, 2005, SRef-ID: 1607-7962/gra/EGU05-A-00134

Jablonowski, C., M. Herzog, R. C. Oehmke, J. E. Penner, Q. F. Stout and B. van Leer (2003), **Adaptive Grids in Climate Modeling: Tests of the Dynamical Core**, Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract A11D-02

**Herzog, M., C. Jablonowski, R. C. Oehmke, J. E. Penner, Q. F. Stout and B. van Leer (2003), Adaptive Grids in Climate Modeling: Concept and First, Results Eos Trans. AGU, 84(46), Fall Meet. Suppl., Abstract A11D-01**

**ONLINE PAPER DISCUSSIONS AND ENDORSEMENTS, PRESS COVERAGE**

- Press coverage (September 2011) concerning my Presidential Early Career Award for Scientists and Engineers (PECASE):  
<http://www.whitehouse.gov/the-press-office/2011/09/26/president-obama-honors-outstanding-early-career-scientists>  
<http://energy.gov/articles/thirteen-department-energy-researchers-honored-presidential-early-career-award-scientists>  
<http://science.energy.gov/about/honors-and-awards/pecase/winners-since-1996/>  
<http://www.ur.umich.edu/update/archives/110927/pecase>  
<http://www.annarbor.com/news/three-university-of-michigan-researchers-receive-presidential-early-career-awards/>  
<http://www.michigandaily.com/news/u-profs-receive-presidential-research-grant?page=0,0>
- Online endorsement of the climate modeling panel discussion at SC'10, 9/11/2010:  
<http://insidehpc.com/2010/11/09/supercomputing-for-a-changing-planet-simulation-and-climate-change/>
- Department of Energy, ASCR Magazine, Online article about the DoE Early Career Award, 3/31/2010:  
<http://ascr-discovery.science.doe.gov/newfaces/ecrp1.shtml>
- Crain's Detroit Business, Online article about the DoE Early Career Award, 1/19/2010,  
<http://www.craindetroit.com/article/20100120/GEO01/100129993/1159>

- Online discussion of the paper: Jablonowski, C. and D. L. Williamson (2006), **A Baroclinic Instability Test Case for Atmospheric Model Dynamical Cores**, Quart. J. Roy. Met. Soc., Vol. 132, October Part C, No. 621C, 2943-2975 by Prof. Judith Curry (Georgia Institute of Technology) and the blog community [www.climateaudit.org](http://www.climateaudit.org): <http://www.climateaudit.org/?p=2696>
- Online feature story about the *2008 NCAR summer colloquium*, web page of NCAR's Computational & Information Systems Laboratory (CISL): <http://www.cisl.ucar.edu/research/2008/0804.ASPcolloq.jsp>
- Online endorsement of Prof. Quentin Stout's and my *Parallel Computing 101* tutorial presented at the conference SuperComputing 2008 in Austin, TX, recommended by HPCwire: [http://www.hpcwire.com/specialfeatures/sc08/features/Executive\\_Guide\\_to\\_SC08\\_Sunday\\_and\\_Monday\\_34226999.html](http://www.hpcwire.com/specialfeatures/sc08/features/Executive_Guide_to_SC08_Sunday_and_Monday_34226999.html)
- Discussion of Prof. Quentin Stout's and my *Parallel Computing 101* tutorial presented at the conference SuperComputing 2007, Reno, NV, Blog entry: <http://blogs.zdnet.com/Burnette/?p=443>
- Parallel Computing 101 Tutorial Notes by Utah State University, partly based on Quentin Stout's and my *Parallel Computing 101* tutorial, presented at the conference SuperComputing 2006 in Tampa, FL: [http://www.hpc.usu.edu/files/uploads/ACRES/Parallel\\_Computing\\_101.pdf](http://www.hpc.usu.edu/files/uploads/ACRES/Parallel_Computing_101.pdf)
- Online feature about my NCAR postdoctoral experience in *Science Careers* (from the journal *Science*), **Soaring into Atmospheric Science** by Andrew Fazekas, November 25, 2005, web link: [http://sciencecareers.sciencemag.org/career\\_development/previous\\_issues/articles/2005\\_11\\_25/soaring\\_into\\_atmospheric\\_science](http://sciencecareers.sciencemag.org/career_development/previous_issues/articles/2005_11_25/soaring_into_atmospheric_science)

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## CONFERENCE AND SEMINAR PRESENTATIONS

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### 2012

- Lauritzen, P. H., W. C. Skamarock, M. J. Prather, M. A. Taylor and C. Jablonowski, **Assessing accuracy of transport schemes in global climate-weather models**, EGU General Assembly 2012, Vienna, Austria, April 22-27, 2012
- Reed, K. A., M. F. Wehner and C. Jablonowski, **Towards the Direct Simulation of Tropical Cyclones in the High-Resolution Community Atmosphere Model**, EGU General Assembly 2012, Vienna, Austria, April 22-27, 2012
- Jablonowski, C and K. A. Reed, **Structural Uncertainty of Tropical Cyclone Simulations in General Circulation Models**, oral presentation at the 30<sup>th</sup> AMS Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, USA, April 15-20, 2012
- Zarzycki, C. and C. Jablonowski, **Using variable resolution meshes to model tropical cyclones in NCAR's CAM general circulation model**, oral presentation at the 30<sup>th</sup> AMS Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, USA, April 15-20, 2012
- Reed, K. A., M. F. Wehner and C. Jablonowski, **Tropical Cyclone Characteristics in the High-Resolution Community Atmosphere Model**, oral presentation at the 30<sup>th</sup> AMS Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, USA, April 15-20, 2012
- Reed, K. A. and C. Jablonowski, **Evaluating the impact of the CAM 5 dynamical core in idealized tropical cyclone simulations**, oral presentation at the 92nd American Meteorological Society (AMS) Annual Meeting and 23rd Conference on Climate Variability and Change, New Orleans, LA, USA, January 22-26, 2012

**2011**

- Ullrich, P. A. and C. Jablonowski, **MCORE: A High-Order Finite-Volume Dynamical Core for Atmospheric General Circulation Models**, oral presentation at the AGU Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011
- Reed, K. A. and C. Jablonowski, **Idealized Tropical Cyclone Simulations of Intermediate Complexity: A Test Case for AGCMs**, poster presentation at the AGU Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011
- Zarzycki, C. M. and C. Jablonowski, **Modeling Tropical Cyclones in NCAR's General Circulation Model with Variable-Resolution Meshes**, oral presentation at the AGU Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011
- Yao, W. and C. Jablonowski, **Idealized Simulations of the Quasi-Biennial Oscillation With Different GCM Dynamical Cores: The Role of Parameterized Gravity Waves**, poster presentation at the AGU Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011
- Fiorella, R. P., C. J. Poulsen, C. Jablonowski and C. M. Bitz, **Resistance to Snowball Earth Initiation in the CAM3.1 Slab Ocean Model**, poster presentation at the AGU Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011
- Kent, J. J., Whitehead, C. Jablonowski and R. B. Rood, **Assessing the Accuracy of Tracer Transport Schemes in the Dynamical Cores of General Circulation Models**, poster presentation at the AGU Fall Meeting 2011, San Francisco, CA, USA, December 5-9, 2011
- Reed, K. A. and C. Jablonowski, **Towards the Simulation of Tropical Cyclones in High-Resolution GCMs: Assessing Uncertainty**, Poster presentation at the World Climate Research Programme (WCRP) Open Science Conference, Denver, CO, October 24-28, 2011
- Whitehead, J., J. Kent, C. Jablonowski and R. B. Rood, **Evaluating the impact of dissipative subgrid-scale mixing processes in the dynamical cores of NCAR's Community Atmosphere Model**, Invited presentation at the Department of Energy's Climate and Earth System Modeling Program Team Meeting, Washington, D.C., USA, September 19-22, 2011
- Reed, K. A. and C. Jablonowski, **Towards the Simulation of Tropical Cyclones in High-Resolution GCMs**, Invited presentation at the Workshop on Numerical Methods for Scale Interactions, Hamburg, Germany, September 21-23, 2011
- Jablonowski, C., P. A. Ullrich and K. A. Reed, **High-Order Methods and Nonhydrostatic Designs on Quasi-Uniform and Variable-Resolution Grids: Tackling the Numerical Challenges for Future-Generation GCMs**, Invited presentation at the Global-to-Regional Climate Simulation Workshop, Santa Fe, NM, USA, August 3-5, 2011
- Jablonowski, C. and P. A. Ullrich, **A High-Order Finite-Volume Scheme for the Dynamical Core of Weather and Climate Models**, Invited poster presentation at the Scientific Discovery through Advanced Computing Program (SciDAC) Conference, Denver, CO, USA, July 10-14, 2011
- Reed, K. A. and C. Jablonowski, **Assessing the uncertainty of tropical cyclone simulations in GCMs**, Poster presentation at the 3rd International Summit on Hurricanes & Climate Change, Rhodes, Greece, June 27-July 2, 2011
- Ullrich, P. A. and C. Jablonowski, **MCORE: A High-Order Finite-Volume Dynamical Core**, Poster presentation at the 16th Annual CCSM Workshop, Breckenridge, CO, USA, June 20-23, 2011
- Reed, K. A., C. Jablonowski and M.A. Taylor, **Evaluating the Potential of CAM HOMME to Simulate Idealized Tropical Cyclones**, Poster presentation at the 16th Annual CCSM Workshop, Breckenridge, CO, USA, June 20-23, 2011

Jablonowski, C., P. A. Ullrich and K. A. Reed, **Tackling the numerical challenges of future-generation climate models: High-order methods, nonhydrostatic designs, variable-resolution and cubed-sphere grids, and how to test models**, Invited presentation at the Institute for Mathematics and Its Applications (IMA), Workshop 'Societally Relevant Computing', Minneapolis, MN, USA, April 11-15, 2011

Jablonowski, C., P. A. Ullrich, **A High-Order Finite-Volume Scheme for the Dynamical Core of Weather and Climate Models**, Poster presentation at the Institute for Mathematics and Its Applications (IMA), Workshop 'Societally Relevant Computing', Minneapolis, MN, USA, April 11-15, 2011

Yao, W. and C. Jablonowski, **Assessing the Impact of Three Temperature Profiles on Idealized Simulations of the Quasi-Biennial Oscillation**, Poster Presentation at the 2011 Michigan Geophysical Union (MGU) Meeting, Ann Arbor, MI, USA, March 25, 2011

Reed, K. A. and C. Jablonowski, **Evaluating the Uncertainty of Tropical Cyclone Simulations in General Circulation Models**, Poster Presentation at the 2011 Michigan Geophysical Union (MGU) Meeting, Ann Arbor, MI, USA, March 25, 2011

Ullrich, P. A. and C. Jablonowski, **A Family of High-Order Finite-Volume Schemes for Simulating Atmospheric Flows**, SIAM Conference on Mathematical and Computational Issues in the Geosciences, Long Beach, CA, USA, March 21-24, 2011

Jablonowski, C. and P. A. Ullrich, **A High-Order Finite-Volume Technique for Nonhydrostatic Dynamical Cores on (Adaptive) Cubed-Sphere Grids**, Invited presentation at the NCAR/UKMO/NCAS Workshop on Next Generation Weather and Climate Models, Boulder, CO, USA, 7-9 March 2011

Reed, K. A. and C. Jablonowski, **Role of the convection parameterization in AGCM simulations of idealized tropical cyclones**, Poster presentation at the COST Water Vapor in the Climate System Winter School, Venice, Italy, February 6-12, 2011

Reed, K. A. and C. Jablonowski, **Evaluating the impact of the CAM 5 dynamical core in idealized tropical cyclone simulations**, Oral presentation at the AMS 91st Annual Meeting and 23rd Conference on Climate Variability and Change, Seattle, WA, USA, January 23-27, 2011

## 2010

Reed, K. A. and C. Jablonowski, **Assessing the Significance of Varying AGCM Physics Packages on Idealized Tropical Cyclone Simulations**, poster presentation at the AGU Fall Meeting 2010, San Francisco, CA, USA, December 13-17, 2010

Ullrich, P. A. and C. Jablonowski, **A look at high-order Finite-Volume schemes for simulating atmospheric flows**, oral presentation at the AGU Fall Meeting 2010, San Francisco, CA, USA, December 13-17, 2010

Jablonowski, C. and K. A. Reed, **Idealized Tropical Cyclone Simulations of Intermediate Complexity: A Test Case for Atmospheric GCMs**, oral presentation at the AGU Fall Meeting 2010, San Francisco, CA, USA, December 13-17, 2010

Reed, K. A. and C. Jablonowski, **Evaluating the Impact of the CAM 5 Dynamical Core in Idealized Tropical Cyclone Simulations**, poster presentation at the UM 2010 CoE Graduate Engineering Symposium, Ann Arbor, MI, USA, November 12, 2010

Ullrich, P. A. and C. Jablonowski, **High-order finite-volume schemes for simulating atmospheric flows**, poster presentation at the UM 2010 CoE Graduate Engineering Symposium, Ann Arbor, MI, USA, November 12, 2010

Jablonowski, C., **The Pros and Cons of Diffusion, Filters and Fixers in Atmospheric General Circulation Models**, Invited seminar presentation at the Geoforschungszentrum (GFZ German Research Centre for Geosciences), Potsdam, Germany, August 30, 2010

Ullrich, P. A. and C. Jablonowski, **A look at high-order Finite-Volume schemes for simulating atmospheric flows**, Oral presentation at the Workshop on Partial Differential Equations on the Sphere, Potsdam, Germany, August 24-27, 2010

Jablonowski, C. and K. A. Reed, **Complementing the Hierarchy of GCM Test Cases: Idealized Tropical Cyclone Simulations of Intermediate Complexity**, Oral presentation at the Workshop on Partial Differential Equations on the Sphere, Potsdam, Germany, August 24-27, 2010

Whitehead, J., C. Jablonowski, R. B. Rood and P. H. Lauritzen, **A Stability Analysis of Divergence Damping on a Latitude-Longitude Grid**, Oral presentation at the Workshop on Partial Differential Equations on the Sphere, Potsdam, Germany, August 24-27, 2010

Jablonowski, C. and K. A. Reed, **Evaluating the Impact of the GCM Dynamical Core in Idealized Tropical Cyclone Simulations**, Oral presentation at the Workshop on High-Resolution Global Modeling, Fort Collins, CO, USA, June 15-17, 2010

Reed, K. A. and C. Jablonowski, **Idealized tropical cyclone experiments in High-Resolution AGCMs**, Poster presentation at the Workshop on High-Resolution Global Modeling, Fort Collins, CO, USA, June 15-17, 2010

Jablonowski, C., **The Design of Future-Generation Dynamical Cores and GCMs**, Invited presentation at the IPAM Culminating Workshop, Lake Arrowhead, CA, USA, June 7-11, 2010

**Reed, K. A. and C. Jablonowski**, Idealized tropical cyclones in atmospheric general circulation models: sensitivity to convective parameterizations, **Oral presentation at 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, USA, AZ, May 14, 2010**

Jablonowski, C. and K. A. Reed, **Idealized Tropical Cyclones in Atmospheric General Circulation Models: The Impact of the Dynamical Core**, Poster Presentation at the 29th AMS Conference on Hurricanes and Tropical Meteorology, Tucson, USA, AZ, May 13, 2010

Jablonowski, C. and P. A. Ullrich, **An Analysis of Finite-Volume schemes: High-order Methods and Grid Reflections on Adaptive Grids**, Invited oral presentation at the NSF Institute for Pure and Applied Mathematics (IPAM), Workshop II: Numerical Hierarchies for Climate Modeling, Los Angeles, CA, USA, April 16, 2010

Ullrich, P. A. and C. Jablonowski, **High-Order Finite-Volume Methods for Geophysical Flow Problems**, Poster presentation at the NSF Institute for Pure and Applied Mathematics (IPAM), Workshop II: Numerical Hierarchies for Climate Modeling, Los Angeles, CA, USA, April 12, 2010

Whitehead, J., C. Jablonowski and R. B. Rood, **Divergence Damping: Is Additional Diffusion 'Good' for Stability?**, Poster presentation at the DoE Science Team Meeting, Earth System Modeling (ESM) Program, Washington D.C., USA, March 31, 2010

Ullrich, P. A. and C. Jablonowski, **High-Order Finite-Volume Methods for Geophysical Flow Problems**, Poster presentation at the 2010 Michigan Geophysical Union (MGU) Meeting, Ann Arbor, MI, USA, March 26, 2010

Whitehead, J., C. Jablonowski and R. B. Rood, **Divergence Damping: Is Additional Diffusion 'Good' for Stability?**, Poster presentation at the 2010 Michigan Geophysical Union (MGU) Meeting, Ann Arbor, MI, USA, March 26, 2010

Jablonowski, C., **On the Design of Dynamical Cores for Atmospheric General Circulation Models (GCMs): Physical and Computational Challenges (Part II)**, Tutorial at the NSF Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, USA, March 16, 2010

Jablonowski, C., **On the Design of Dynamical Cores for Atmospheric General Circulation Models (GCMs): Physical and Computational Challenges (Part I)**, Tutorial at the NSF Institute for Pure and

Applied Mathematics (IPAM), Los Angeles, CA, USA, March 10, 2010

Jablonowski, C., **On the Design of Dynamical Cores for Atmospheric General Circulation Models (GCMs): Numerical and Scientific Challenges**, Tutorial at the NSF Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, USA, March 9, 2010

Reed, K. A. and C. Jablonowski, **Idealized Tropical Cyclones in Atmospheric General Circulation Models: Sensitivity to Initial Conditions and Physics Parameterizations**, Oral presentation at the AMS 90th Annual Meeting and 22nd Conference on Climate Variability and Change, Atlanta, GA, Jan. 17-21, 2010

## 2009

Ullrich, P. A. and C. Jablonowski, **Riemann-Solver Based Finite-Volume Models for the Shallow-Water Equations on the Sphere**, Oral presentation at the 2009 UM Engineering Graduate Symposium, session: *Civil, Environmental and Atmospheric Sciences*, November 13, 2009

Reed, K. and C. Jablonowski, **Idealized Tropical Cyclones in Atmospheric General Circulation Models: Sensitivity to Initial Conditions and Physics Parameterizations**, Oral presentation at the 2009 UM Engineering Graduate Symposium, session: *Civil, Environmental and Atmospheric Sciences*, November 13, 2009

Jablonowski, C., **Introducing Software Infrastructure into the Climate Modeling Curriculum**, Kick-off Meeting of the NOAA Global Interoperability Program (GIP), Princeton, NJ, Nov. 5-6, 2009

Jablonowski, C and P. A. Ullrich, **Adaptive Mesh Refinement on the Sphere: Insights into computational grids, wave propagation and diffusion properties**, Invited minisymposium talk at the conference ICOSAHOM 09, Trondheim, Norway, June 22-26, 2009

Jablonowski, C., W. Sawyer, B. Eaton, W. Putman, A. Mirin, P. H. Lauritzen, M. A. Taylor, J. Edwards, P. Worley, J. Drake, **The FV-Cube Dynamical Core in NCAR's Community Atmosphere Model CAM**, Poster presentation at the 14th Annual CCSM Workshop, Breckenridge, CO, USA, June 15-18, 2009

Ullrich, P., P. H. Lauritzen, C. Jablonowski, **GECORE: A new geometrically exact remapping scheme on the sphere**, Oral presentation at the Workshop on Solutions of Partial Differential Equations on the Sphere, Santa Fe, NM, USA, April, 27-30, 2009

Jablonowski, C., P. H. Lauritzen, M. A. Taylor and R. D. Nair, **A Test Suite for GCMs: An Intercomparison of 11 Dynamical Cores**, Oral presentation at the Workshop on Solutions of Partial Differential Equations on the Sphere, Santa Fe, NM, USA, April, 27-30, 2009

Jablonowski, C., R. B. Rood, K. Bhaganagar, **Subgrid-Mixing in Climate Models: A Novel Look at Diffusion, Accuracy and Climate Sensitivity**, Poster presentation at the DoE Climate Change Prediction Program (CCPP) Meeting, Bethesda, MD, USA, April 7-9, 2009

Penner, J. E., N. Andronova, Q. F. Stout, B. van Leer, J. Boyd, C. Jablonowski, K. Powell, **The 3-D AMR on a Spherical Shell for Atmospheric Models with Lagrangian Coordinates**, Poster at the DoE Climate Change Prediction Program (CCPP) Meeting, Bethesda, MD, USA, April 7-9, 2009

Jablonowski, C and P. A. Ullrich, **The Pros and Cons of Adaptive Meshes in Atmospheric Finite Volume Models**, Invited key lecture at the workshop *Multi-scale Modelling of the Atmosphere and Ocean*, Reading, UK, March 25-26, 2009

Reed, K. and C. Jablonowski, **Idealized Tropical Cyclones in Atmospheric General Circulation Models**, Poster Presentation at the 2009 Michigan Geophysical Union (MGU) Meeting, Ann Arbor, MI, USA, March 20, 2009

Ullrich, P. A., P. H. Lauritzen and C. Jablonowski, **GECORE: A New Geometrically Exact Remapping Scheme on the Sphere**, Poster presentation at the 2009 Michigan Geophysical Union (MGU) Meeting, Ann Arbor, MI, USA, March 20, 2009

**2008**

Jablonowski, C., P. H. Lauritzen, M. A. Taylor and R. D. Nair, **An Intercomparison of 10 Atmospheric Model Dynamical Cores** (Dec. 17, 2009), Poster Presentation at the AGU Fall Meeting 2008, San Francisco, CA, USA, December 15-19, 2008

Reed, K. and C. Jablonowski, **Idealized Tropical Cyclones in Atmospheric General Circulation Models** (Dec. 17, 2009), Poster Presentation at the AGU Fall Meeting 2008, San Francisco, CA, USA, December 15-19, 2008

Lauritzen, P. H. and C. Jablonowski, **A rotated version of the Jablonowski-Williamson baroclinic wave test case** (Dec. 17, 2009), Poster Presentation at the AGU Fall Meeting 2008, San Francisco, CA, USA, December 15-19, 2008

Ullrich, P. A., P. H. Lauritzen and C. Jablonowski, **GECORE: A New Geometrically Exact Remapping Scheme on the Sphere**, Poster presentation at the 2008 UM Engineering Graduate Symposium, session: *Civil, Environmental and Atmospheric Sciences*, November 7, 2008

Ullrich, P. A., P. H. Lauritzen and C. Jablonowski, **GECORE: A New Geometrically Exact Remapping Scheme on the Sphere**, Oral presentation at the 2008 UM Engineering Graduate Symposium, session: *Civil, Environmental and Atmospheric Sciences*, November 7, 2008

Jablonowski, C. and A. St-Cyr, **Adaptive Mesh Refinement (AMR) for Multi-Scale Climate Models**, Invited seminar presentation at Harvard University, Boston, MA, October 17, 2008

Jablonowski, C., **Test Cases for Atmospheric Model Dynamical Cores** (Sep. 24, 2008), Invited presentation at the NCAR Workshop on Global Atmospheric Dynamical Cores, Boulder, CO, USA, Sep. 24-25, 2008

Taylor, M., C. Jablonowski, P. H. Lauritzen and R. Nair, **Petascale Atmospheric Models for the CCSM: New Developments and Evaluation of Scalable Dynamical Cores**, Invited presentation at the DoE SciDAC 2008 meeting, Seattle, Washington, July 13-17, 2008

Jablonowski, C. and A. St-Cyr, **Adaptive Mesh Refinements for Weather and Climate Models** (July 10, 2008), Invited presentation at the SIAM Annual Meeting, San Diego, CA, USA, July 7-11, 2008

Jablonowski, C., P. H. Lauritzen, M. A. Taylor and R. D. Nair, **The Dynamical Core Experiment: An Overview of the 2008 NCAR ASP Colloquium**, Poster Presentation at the 13th Annual CCSM Workshop, Breckenridge, CO, USA, June 17-19, 2008

Jablonowski, C., **Numerical Noise: The Pros and Cons of Filters, Diffusion and Damping Mechanisms** (June 6, 2008), NCAR ASP Summer Colloquium, Boulder, CO, USA, June 2-13, 2008 (invited)

Jablonowski, C., **Adaptive Grids for Atmospheric General Circulation Models** (June 5, 2008), NCAR ASP Summer Colloquium, Boulder, CO, USA, June 2-13, 2008 (invited)

Jablonowski, C., P. H. Lauritzen, M. A. Taylor and R. D. Nair, **Idealized Test Cases for Dynamical Core Experiments** (June 3, 2008), NCAR ASP Summer Colloquium, Boulder, CO, USA, June 2-13, 2008 (invited)

Lauritzen, P. H., C. Jablonowski, M. A. Taylor and R. D. Nair, **NCAR's 2008 ASP Summer Colloquium on Numerical Techniques for Global Atmo-spheric Models (June 2, 2008)**, NCAR ASP Summer Colloquium, Boulder, CO, USA, June 2-13, 2008 (inv.)

Oehmke, R., D. Vandenberg, N. Andronova, J. Penner, Q. Stout, V. Zubov and C. Jablonowski, **3-D grid refinement using the University of Michigan adaptive mesh library for a pure advective test**, AGU Joint Assembly 2008, Fort Lauderdale, FL, USA, May 27-30, 2008

Jablonowski, C., **Test cases for extra terrestrial (Mars and Venus) General Circulation Models**, NCAR Atmosphere Working Group Meeting, Invited presentation at the break-out session on Extra-Terrestrial Atmospheres, Boulder, CO, Feb/12-15/2008

**2007**

- Jablonowski, C., **In-depth look at the Adaptive Mesh Refinement (AMR) in the FV model** (Dec 5, 2007), Invited presentation at the Kakushin Workshop, Kyoto, Japan
- Jablonowski, C. and A. St-Cyr, **Adaptive Mesh Refinements (AMR) for Multi-Scale Climate Models** (Dec 3, 2007), Invited presentation at the APCOM '07-EPMESC XI conference, Kyoto, Japan
- St-Cyr, A. and C. Jablonowski, **A Comparison of Two Shallow Water Models with Non-Conforming Adaptive Grids**, Seminar of numerical analysis (invited), Mathematics section, University of Geneva, Switzerland, October 10, 2007
- St-Cyr, A. and C. Jablonowski, **A Comparison of Two Shallow Water Models with Non-Conforming Adaptive Grids**, Second-generation Louvain-la-Neuve Ice-ocean Model (SLIM) meeting, Louvain-la-Neuve, Belgium, October 5, 2007
- Jablonowski, C. and A. St-Cyr, **Adaptive Grids for Multi-Scale Dynamical Cores: Cubed-Spheres versus Latitude-Longitude Grids** (Sep. 26, 2007), Presentation at the 2007 Workshop on the Solution of Partial Differential Equations on the Sphere (PDEs on the Sphere), Exeter, United Kingdom, September 24-27, 2007
- Jablonowski, C., A. St-Cyr, J. M. Dennis, R. C. Oehmke, J. E. Penner, N. Andronova, Q. F. Stout and M. Herzog, **Adaptive Mesh Refinements (AMR) for Multi-Scale Climate Models** (Sep. 19, 2007), Invited poster presentation at the DoE Climate Change Prediction Program (CCPP) Meeting, Indianapolis, IN, USA, Sep. 17-19, 2007
- Jablonowski, C., A. St-Cyr, J. M. Dennis, R. C. Oehmke, J. E. Penner, N. Andronova, Q. F. Stout and M. Herzog, **Adaptive Mesh Refinements (AMR) for Multi-Scale Climate Models** (Aug. 28, 2007), Poster presentation at the Second International Conference on Earth System Modeling, Hamburg, Germany, August 27-31, 2007
- St-Cyr, A. and C. Jablonowski, **A Comparison of Two Shallow Water Models with Non-Conforming Adaptive Grids**, University of Victoria, Mathematics colloquium (invited), Victoria, Canada, August 2007
- St-Cyr, A. and C. Jablonowski, **Deux methods numeriques a maillage adaptatif pour les equations de St-Venant sur la sphere, Recherche en prevision numerique**, Invited seminar presentation, Environment Canada, Montreal, Canada, July 2007
- St-Cyr, A. and C. Jablonowski, **Deux methods numeriques a maillage adaptatif pour les equations de St-Venant sur la sphere**, Invited seminar presentation, Recherche en prevision numerique, UQAM, Montreal, Canada, July 2007
- Jablonowski, C., **On the Existence and Non-Existence of QBO-like Oscillations in Dynamical Cores of General Circulation Models** (June 27, 2007), Presentation at the 16th Conference on Atmospheric and Oceanic Fluid Dynamics, Santa Fe, NM, USA, June 24-29, 2007
- Penner, J., N. Andronova, R. Oehmke, J. Brown, C. Jablonowski and Q. Stout, **Three Dimensional Adaptive Mesh Refinement on a Spherical Shell for Atmospheric Models with Lagrangian Coordinates**, Invited poster presentation at the SciDAC 2007 meeting, 24-28 June 2007, Boston, MA, USA
- Jablonowski, C. and A. St-Cyr, **Adaptive Meshes on the Sphere: Cubed-Spheres versus Latitude-Longitude Grids** (May 31, 2007), Invited presentation at the ICON & Friends Workshop, Langen, Germany, May, 29 - June, 1, 2007
- St-Cyr, A., C. Jablonowski, J. M. Dennis, H. M. Tufo and S. J. Thomas, **A Comparison of Two Shallow Water Models with Non-Conforming Adaptive Grids**, Invited seminar presentation at the Applied Mathematics Colloquium, New York City, NY, February 20, 2007

**2006**

Jablonowski, C., **A Proposed Test Suite for Atmospheric Model Dynamical Cores**, Poster presentation at the AGU Fall Meeting 2006, San Francisco, CA, USA, December 11-15, 2006

Jablonowski, C. and A. St-Cyr, **Adaptive Meshes on the Sphere: Cubed-Spheres versus Latitude-Longitude Grids** (Dec. 8, 2006), Invited seminar presentation, Department of Atmospheric, Oceanic & Space Sciences, University of Michigan, Ann Arbor, MI

Jablonowski, C., **A Proposed Test Suite for Atmospheric Model Dynamical Cores**, Presentation at the 2006 Workshop on the Solution of Partial Differential Equations on the Sphere, Monterey, CA, USA, June 26 - 29, 2006

Jablonowski, C., **Quasi-Biennial (QBO)-like Oscillations in Idealized Dynamical Core Experiments** (June 27, 2006), Presentation at the 2006 Workshop on the Solution of Partial Differential Equations on the Sphere, Monterey, CA, USA, June 26 - 29, 2006

Jablonowski, C., **A Proposed Test Suite for Atmospheric Model Dynamical Cores**, Poster presentation at the 11th Annual CCSM Workshop, Breckenridge, Colorado, USA, June 20 - 22, 2006

Jablonowski, C., M. Herzog, J. E. Penner, R. C. Oehmke, Q. F. Stout, **Adaptive Mesh Refinements for Future Weather and Climate Models** (May 10, 2006), Invited seminar presentation, Courant Institute, New York University, New York, NY

Penner P., N. Andronova, M. Herzog, R. C. Oehmke, C. Jablonowski, B. van Leer, Q. F. Stout and K. G. Powell, **Development of an Atmospheric Climate Model with Self-Adapting Grid and Physics**, Invited poster presentation at the DoE Climate Change Prediction Program (CCPP) meeting, April 24- 26, 2006, Cambridge, MA, USA

Jablonowski, C. and D. L. Williamson, **A baroclinic instability test case for dynamical cores of GCMs**, Invited presentation at the CCSM Atmosphere Model Working Group Meeting, NCAR, Boulder, CO, March 20-22, 2006

**2005**

Jablonowski, C., M. Herzog, J. E. Penner, R. C. Oehmke, Q. F. Stout, **Adaptive Grids for Future Weather and Climate Models** (November 18, 2005), Invited seminar presentation, Department of Atmospheric Sciences, University of Washington, Seattle, WA

Jablonowski, C., **QBO-like Oscillations in Dynamical Core Experiments**, Poster presentation at the 10th Annual CCSM Workshop, Breckenridge, Colorado, USA, June 21 - 23, 2005

Jablonowski, C., **QBO-like Oscillations in Dynamical Core Experiments** (June 15, 2005), Presentation at the AMS meetings: 13th Conference on Middle Atmosphere, 15th Conference on Atmospheric and Oceanic Fluid Dynamics, 7th Conference on Climate Variability and Change, Cambridge, MA, USA, June 12 - 17, 2005

Jablonowski, C., **Adaptive Grids for Future Weather Prediction Models**, Presentation at the SIAM Conference on Mathematical & Computational Issues in the Geosciences, Avignon, France, June 7 - 10, 2005

Jablonowski, C., **Adaptive Grids for Weather and Climate Models** (June 3, 2005), Invited seminar presentation at the Laboratoire de Meteorologie Dynamique du CNRS - Ecole Normale Supérieure (LMD/ENS), Paris, France

Jablonowski, C., M. Herzog, R. Oehmke, J. E. Penner, Q. F. Stout, B. van Leer, **Adaptive Grids for Future Weather Prediction Models** (April 27, 2005), Presentation at the European Geosciences Union General Assembly, Vienna, Austria, April 24 - 29, 2005

**2004**

Jablonowski, C., M. Herzog, R. Oehmke, J. E. Penner, Q. F. Stout, B. van Leer, **Adaptive Grids for Weather and Climate Models** (September 9, 2004), Invited presentation at the ECMWF 2004 Seminar on Recent Developments in Numerical Methods for Atmospheric and Ocean Modelling, Reading, UK, September 6 - 10, 2004

Jablonowski, C., M. Herzog, R. C. Oehmke, J. E. Penner, Q. F. Stout and B. van Leer, **An Adaptive Mesh Refinement Strategy for Future GCMs** (July 23, 2004), Presentation at the 2004 Workshop on the Solution of Partial Differential Equations on the Sphere, Yokohama, Japan, July 20 - 23, 2004

Jablonowski, C., **Adaptive Grids for Weather and Climate Models**, Poster presentation at the 9th Annual CCSM Workshop, Santa Fe, New Mexico, USA, July 7 - 9, 2004

Jablonowski, C., M. Herzog, R. C. Oehmke, J. E. Penner, Q. F. Stout and B. van Leer, **Adaptive Mesh Refinements for Weather and Climate Models** (March 29, 2004), Invited presentation at the 8th Copper Mountain Conference on Iterative Methods (Minisymposium), Copper Mountain, CO, 3/28 - 4/2, 2004

Herzog, M., C. Jablonowski, R. C. Oehmke, J. E. Penner, Q. F. Stout, B. van Leer, **Development of an Atmospheric Climate Model with Self-Adapting Grid and Physics** (March 23, 2004), Invited presentation at the SciDAC 2004 meeting, Charleston, SC, USA, March 22-24, 2004

**2003**

Jablonowski, C., M. Herzog, R. C. Oehmke, J. E. Penner, Q. F. Stout and B. van Leer (December 8, 2003), **Adaptive Grids in Climate Modeling: Dynamical Core Tests**, Presentation at the AGU Fall Meeting 2003, San Francisco, California, USA, December 8-12, 2003

**Herzog, M., C. Jablonowski, R. C. Oehmke, J. E. Penner, Q. F. Stout and B. van Leer (2003)**, Adaptive Grids in Climate Modeling: Concept and First Results, Presentation at the AGU Fall Meeting 2003, San Francisco, California, USA, December 8-12, 2003

Jablonowski, C., **Adaptive Grids in Climate and Weather Modeling** (March 31, 2003), Invited seminar presentation, VIGRE Working Group in Scientific Computing, Department of Mathematics, University of Michigan, Ann Arbor, MI, USA

**2002 - 1998**

Jablonowski, C., **New idealized test cases for dynamical cores** (August 12, 2002), Presentation at the 2002 Workshop on the Solutions of Partial Differential Equations on the Sphere, Toronto, ON, Canada, August 12 - 15, 2002

Jablonowski, C., **Adaptive Methods in Weather and Climate Modeling** (February 5, 2002), Invited presentation at the NCAR Workshop on Adaptive and High-Order Methods with Applications in Turbulence, Boulder, CO, USA, February 4-6, 2002

Jablonowski, C., **Towards a standardized test suite for dynamical core intercomparisons: Growing baroclinic waves** (May 18, 2001), Presentation at the 2001 Workshop on the Solutions of Partial Differential Equations on the Sphere, Montreal, Quebec, Canada, May 15 - May 18, 2001

Jablonowski, C., **The Dynamical Core Intercomparison Project: Approaches to analyzing dynamical core experiments** (December 1, 1999), Presentation at the 8th Workshop on the Solutions of Partial Differential Equations on the Sphere, San Francisco, CA, USA, November 30 - December 3, 1999

Jablonowski, C., **Test of three dynamical cores: A discussion about the new DWD global model GME, the operational DWD model GM and the ECMWF model IFS** (April 28, 1998), Presentation at the 6th Workshop on the Solutions of Partial Differential Equations on the Sphere, Gatlinburg TN, 4/28 - 5/1, 1998

Untch, A., C. Jablonowski and M. Hortal, **Results of dynamical core tests at ECMWF** (April 28, 1998), Presentation at the 6th Workshop on the Solutions of Partial Differential Equations on the Sphere, Gatlinburg TN, USA, April 28 - May 1, 1998

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## SCIENTIFIC AND COMMUNITY SERVICE

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### Editorial and reviewer activities

- Associate Editor of the *Journal of Advances in Modeling Earth Systems (JAMES)*, open-access AGU journal, <http://james.agu.org/index.php/JAMES>
- Associate Editor of the AMS Journal *Monthly Weather Review* (in 2008)
- Reviewer for the *Monthly Weather Review*, *Journal of Computational Physics*, *Quarterly Journal of the Royal Meteorological Society*, *Bulletin of the American Meteorological Society (BAMS)*, *Philosophical Transactions of the Royal Society A*, *Geoscientific Model Development*, *Journal of the Atmospheric Sciences*, *Computing in Science and Engineering*, *Lecture Notes in Computational Science and Engineering (Springer)*, *Atmospheric Science Letters*, *Journal of Climate*, *Theoretical and Computational Fluid Dynamics*, *Geophysical Research Letters*
- Reviewer for NSF Proposals
- Member of DoE review panels, DoE ASCR proposals, DoE ALCC proposals

### National and International Service

- Executive Committee Member, Earth System Modeling Framework (ESMF)
- Core Network Member: International Centre for Earth Simulation (ICES), Dec. 2010 – current  
[www.icesfoundation.org](http://www.icesfoundation.org)
- Member of the Steering Committee of NOAA's Global Interoperability Program (GIP), Fall 2009 – current,  
<http://gip.noaa.gov/>
- Invited participant in the World Modelling Summit for Climate Prediction, held at the European Centre for Medium-Range Weather Forecasts (ECMWF), Reading, U.K., 6-9 May 2008
- Invited member of the NCAR Earth System Modeling (ESM) Working Group (February 2008)

### University of Michigan Service

- Member of the Office of Research Cyberinfrastructure (ORCI) Programs Advisory Group
- AOSS Outreach Committee, March 2012 - current
- AOSS Earth System Science and Engineering (ESSE) Undergraduate Advisor for Climate Science, 2006 – current
- Member of AOSS faculty hiring committee, Petascale Computing, Fall 2010 & Winter 2011
- AOSS faculty representative at the Graduate Commencement, UM Rackham Graduate School (April 2011)
- UM Cyberinfrastructure Days, Invited presenter in the session *Exemplars of Computational Discovery at U-M, High-Performance Computing and Modern Algorithms in the Climate Sciences*, Nov. 3, 2010
- Member of the AOSS Qualifying Exam Committee, Winter 2009
- AOSS faculty contact and contributing author of the cluster hire *Petascale Computing* proposal, Jan. 2009
- Member of the AOSS seminar committee, March 2008 – April 2009

- Member of the AOSS graduate committee, May 2008
- March Major Madness (AOSS undergraduate recruiting) event organizer, March 2008
- Member of a hiring committee for an AOSS research scientist, January 2008

### Conferences and Workshops:

- Lead-organizer of the Dynamical Core Model Intercomparison Project (DCMIP) and 2-week summer school on 'Future-Generation Non-Hydrostatic Weather and Climate Models, NCAR, Boulder, CO, 7/30-8/10/2012
- Session chair at the 30<sup>th</sup> AMS Conference on Hurricanes and Tropical Meteorology, Ponte Vedra Beach, FL, USA, April 15-20, 2012
- Co-Organizer of the IPAM Workshop on 'Numerical Model Hierarchies for Climate Modeling' (April 12-16, 2010) as part of the IPAM long program on 'Model and Data Hierarchies for Simulating and Understanding Climate', Institute for Pure and Applied Mathematics (IPAM), NSF Math Institute at UCLA, Los Angeles, March 8 – June 10, 2010, in collaboration with Prof. Francis Giraldo (Naval Postgraduate School, Monterey, CA) and Prof. Sebastian Reich (University of Potsdam, Germany)
- Invited discussion leader at the Workshop *Multi-scale Modelling of the Atmosphere and Ocean*, Reading, UK, March 25-26, 2009
- Co-organizer and convener of the session 'Recent Advances in Atmospheric General Circulation Models: Towards Earth System Models' at the AGU 2008 Fall Meeting in San Francisco, CA, in collaboration with Dr. Peter H. Lauritzen (NCAR), December/15-19/2008
- Co-organizer of the 2-week NCAR Advanced Study Program (ASP) summer colloquium on Numerical Techniques for Global Atmospheric Models, Boulder, CO, June 1-13/2008
- Co-organizer and convener of the session 'Recent Advances in Climate Modeling' (oral session A33F and poster session A41D) at the AGU 2006 Fall Meeting in San Francisco, CA, in collaboration with Dr. J. Richter (NCAR) and Prof. K. Shell (Oregon State University), December/11-15/2006
- Session chair at the 2006, 2007, 2010 Workshops on the Solution of Partial Differential Equations on the Sphere in Monterey, CA, Exeter, UK, Potsdam, Germany
- Session chair at the Workshop 'Numerical Model Hierarchies for Climate Modeling', Institute for Pure and Applied Mathematics (IPAM), Los Angeles, April 2010
- Invited Participant of the NCAR ECSA Junior Faculty Forum on Future Scientific Directions 2009: Connecting Weather and Climate in Theory, Models and Observations, Discussion leader of one breakout group, <http://www.asp.ucar.edu/ecsa/jff/jff09.php>, July 14th-16th, 2009, NCAR, Boulder, CO
- Invited participant of the DoE Cross-cutting Technologies for Computing at the Exascale Workshop, Washington D.C., February 2-4, 2010
- Leader of the mentoring event (luncheon) for junior women in mathematics and atmospheric science at the Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, April 13, 2010
- UM Cyberinfrastructure Days, Invited presenter in the session *Exemplars of Computational Discovery at U-M*, High-Performance Computing and Modern Algorithms in the Climate Sciences, Ann Arbor, MI, November 3, 2010
- Organizer and leader of the panel discussion 'Pushing the Frontiers of Climate and Weather Models: High-Performance Computing, Numerical Techniques and Physical Consistency', at the conference SuperComputing SC'10, New Orleans, November 18, 2010, panel members: P. H. Lauritzen (NCAR), D. L. Randall (CSU), S.-J. Lin (GFDL), W. Putman (NASA), T. Davies (UK Met Office)

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## **PROFESSIONAL SOCIETIES AND NETWORKS**

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Member of the American Geophysical Union (AGU)

Member of the American Meteorological Society (AMS)

Earth Science Women's Network (ESWN)