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## CURRICULUM VITAE

### Christiane Jablonowski

Google Scholar Profile: [https://scholar.google.com/citations?user=GOoy\\_K8AAAAJ&hl=en](https://scholar.google.com/citations?user=GOoy_K8AAAAJ&hl=en)  
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## RESEARCH INTERESTS

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- Adaptive Mesh Refinement (AMR) techniques for Atmospheric General Circulation Models (GCMs), via e.g. the AMR library Chombo
- Machine Learning techniques for GCMs
- Development of test cases for the dynamical cores of GCMs
- International dynamical core model intercomparisons
- Design of future generation ‘seamless’ weather and climate models for multi-scale climate change applications (global to regional scale), variable-resolution techniques
- Subgrid-scale processes in the dynamical cores of GCMs: The impact of diffusion, filters and fixers on climate simulations
- Design of reduced-complexity GCMs
- Idealized simulations of the Quasi-Biennial Oscillation (QBO) and Sudden Stratospheric Warmings (SSWs), stratospheric dynamics
- Extratropical (baroclinic) waves
- Tropical cyclones in the Atlantic Ocean Basin, cyclogenesis processes
- Atmospheric dynamics
- Great Lakes research: Lake-air-land interactions and coupling of atmospheric models to lake models
- Parallel and high-performance computing, petascale computing

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## PROFESSIONAL EXPERIENCE

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**Associate Professor** Sep. 2012 – current  
**University of Michigan, Ann Arbor, Michigan**  
Department of Climate and Space Sciences and Engineering (CLASP)  
until 8/2015: Department of Atmospheric, Oceanic & Space Sciences (AOSS)

**Assistant Professor** Sep. 2006 – Aug 2012  
**University of Michigan, Ann Arbor, Michigan**  
Department of Atmospheric, Oceanic & Space Sciences (AOSS)

**Visiting Research Associate** Mar. 2006 – Aug. 2006  
**Geophysical Fluid Dynamics Laboratory (GFDL) & Princeton University, Princeton, New Jersey**, visit sponsored by the University of Michigan

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

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## EDUCATION

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<b>Ph.D. in Atmospheric and Space Sciences and Scientific Computing</b> University of Michigan, Ann Arbor, Michigan Department of Atmospheric, Oceanic & Space Sciences	Sep. 1998 – Feb. 2004 graduation: April 2004
<b>Diplom-Meteorologin</b> (Diploma degree in Meteorology), comparable to <b>Master of Science in Meteorology</b> University of Bonn, Germany Department of Meteorology Minors: Geophysics, Physical Chemistry	Oct. 1994 – Aug. 1998 graduation: Nov. 1998

**Vordiplom in Physik** (First diploma degree in Physics), comparable to  
**Bachelor of Science in Physics**  
 Aachen University of Technology (RWTH Aachen), Germany  
 Department of Physics, Minors: Computer Science & Numerical Methods

Oct. 1992 – Sep. 1994

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## HONORS & AWARDS

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**Presidential Early Career Award for Scientists and Engineers (PECASE)** Sep. 2011

**Department of Energy Early Career Award** Apr. 2010

**University of Michigan, College of Engineering  
 Distinguished Achievement Award (AOSS department)** Mar. 2010

**Keith Runcorn Travel Award for Non-Europeans (KRTA)** for  
 the EGU conference in Vienna, April 2005 Jan. 17, 2005

**Distinguished Achievement Award**, University of Michigan,  
 College of Engineering, Ann Arbor, Michigan Mar. 14, 2004

**NCAR Postdoctoral Fellowship**, Advanced Study Program and  
 Scientific Computing Division, National Center for Atmospheric Research,  
 Boulder, CO Feb. 2004 – Feb. 2006

**Travel Stipend:** Invitation to the Summer School MAMAOS  
 ‘Modern Applied Mathematics for the Atmospheric and Oceanic Sciences’,  
 University of California, Los Angeles Jul. 13-27, 2003

**NASA Earth System Science Graduate Student Fellowship** Sep. 2000 – Aug. 2003

**Travel Stipend:** 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

**Winner** of the open competition ‘Best Projects at the German National Research  
 Center for Information Technology in 1999 (GMD, St. Augustin, Germany)  
 Category ‘Diploma Thesis’: **Award ‘Best Diploma Thesis at GMD in 1999’** Oct. 21, 1999

**Fellowship** for a three-month stay at the **National Center for Atmospheric  
 Research**, 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 AND MENTORING

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### UM university courses:

AOSS 102: **Extreme Weather** (Fall 2015), undergraduate course for non-science majors

CLIMATE 589: **The Art of Climate Modeling** (Fall 2013, Fall 2016, Fall 2018), graduate course

AOSS 605, section 5: **The Art of Climate Modeling** (Fall 2010), graduate course

CLIMATE 451: **Atmospheric Dynamics I** (Fall 2007, 2008, 2009, 2014, 2017, 2019),  
senior-level/graduate course

CLIMATE 321: **Earth System Dynamics** (Winter 2007, 2008, 2009, 2010, 2011, 2013, 2014,  
2015, 2016, 2017, 2018, 2019), undergraduate course for students with various backgrounds,  
until 2015 co-taught with the UM Department of Earth and Environmental Sciences

#### **Postdoctoral Fellows and Research Scientists:**

**Dr. David Wright**, University of Michigan, February 2019 onwards,  
Cooperative Institute for Great Lakes Research (CIGLR) Postdoctoral Fellowship Holder

**Dr. Ashley Payne**, UC Irvine, September 2016 – August 2018, University of Michigan President's  
Postdoctoral Research Fellow  
9/2018 onwards: Assistant Professor, Department of Climate and Space Sciences and Engineering,  
University of Michigan

**Dr. Malgorzata Winska**, Warsaw University of Technology, October 2015 – September 2016  
Visiting Assistant Research Scientist and Dekaban fellowship holder from Warsaw University of Technology  
(WUT), Poland

**Dr. James Kent**, University of Michigan, May 2010 – December 2014.  
1/2015 onwards: Lecturer - Mathematics, Faculty of Computing, Engineering and Science, University of  
South Wales, U.K.

**Dr. Colin M. Zarzycki**, University of Michigan, June 2014 – August 2014.  
9/2014-8/2016: Postdoctoral Fellowship Holder, Advanced Study Program (ASP) and Climate and Global  
Dynamics Division (CGD), National Center for Atmospheric Research (NCAR), Boulder, CO  
9/2016 – 12/2018: Project Scientist I at NCAR, Climate and Global Dynamics (CGD) and Mesoscale &  
Microscale Meteorology (MMM) divisions  
1/2019 onwards: Assistant Professor, Department of Meteorology and Atmospheric Science,  
Pennsylvania State University

**Dr. Peter Bosler**, University of Michigan, June 2013 – August 2013, June & July 2014.  
9/2013-5/2014: Postdoctoral Assistant Professor, Department of Mathematics, University of Michigan  
8/2014-3/2016: John von Neumann Postdoctoral Research Fellow in Computational Science, Sandia National  
Laboratories, Albuquerque, NM  
3/2016 onwards: Staff scientist, Sandia National Laboratories, Albuquerque, NM

**Dr. Kevin A. Reed**, University of Michigan, May 2012 – August 2012.  
9/2012-8/2013: AGU Congressional Science Fellow in Washington, D.C.  
9/2013-12/2014: Postdoctoral Fellowship Holder, Advanced Study Program (ASP) and Climate and  
Global Dynamics Division (CGD), NCAR  
1/2015 onwards: Assistant Professor, School of Marine and Atmospheric Sciences, Stony Brook University,  
Stony Brook, NY

**Dr. Paul A. Ullrich**, University of Michigan, May 2011 – August 2012.  
9/2012-8/2017: Assistant Professor, Department of Land, Air and Water Resources, University of California,  
Davis, CA  
9/2017 onwards: Associate Professor, Department of Land, Air and Water Resources, UC Davis, CA

**Dr. Kiran Bhaganagar**, Research Scientist, University of Michigan, 2008-2009.  
2009-2015: Assistant Professor, Department of Mechanical Engineering, University of Texas, San

Antonio (UTSA)  
since 2015: Associate Professor, Department of Mechanical Engineering, UTSA

**Current Ph.D. students:**

**Garrett Limon**, Ph.D. Pre-Candidate, University of Michigan, Climate and Space Sciences and Engineering, estimated graduation in 2023. Chair

**Graduated Ph.D. students (alumni):**

**Paul A. Ullrich**, Ph.D. in Atmospheric and Space Science and Scientific Computing, University of Michigan, graduation in May 2011. Chair.

6/2011-8/2012: Postdoctoral fellow, University of Michigan, Ann Arbor, MI

9/2012-8/2017: Assistant Professor, Department of Land, Air and Water Resources, University of California, Davis, CA

since 9/2017: Associate Professor, Department of Land, Air and Water Resources, University of California, Davis, CA

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

since 11/2013: Assistant Professor, Department of Mathematics, Brigham Young University, Utah

**Kevin Reed**, Ph.D. in Atmospheric and Space Science, Graduate Certificate in Public Policy, University of Michigan, graduation in January 2012. Chair.

9/2012-8/2013: AGU Congressional Science Fellow in Washington, D.C.

9/2013-12/2014: Postdoctoral Fellowship Holder, Advanced Study Program (ASP) and Climate and Global Dynamics Division (CGD), NCAR

since 1/2015: Assistant Professor, School of Marine and Atmospheric Sciences, Stony Brook University, NY

**Peter Bosler**, Ph.D. in Mathematics, University of Michigan, Department of Mathematics, Program in Applied and Interdisciplinary Mathematics (AIM), graduation in May 2013, Co-Chair together with Prof. Robert Krasny (UM Mathematics).

9/2013-7/2014: Postdoctoral Assistant Professor, Department of Mathematics, University of Michigan

8/2014-2/2016: John von Neumann Postdoctoral Research Fellow in Computational Science at Sandia National Laboratories, Albuquerque, NM

since 3/2016: Staff Scientist at Sandia National Laboratories, Albuquerque, NM

**Colin M. Zarzycki**, Ph.D. in Atmospheric and Space Science, Graduate Certificate in Computational Discovery and Engineering, University of Michigan, graduation in May 2014. Chair.

9/2014 – 8/2016: Postdoctoral Fellowship Holder, Advanced Study Program (ASP) and Climate and Global Dynamics Division (CGD), NCAR

9/2016 – 12/2018: Project Scientist I at NCAR, Climate and Global Dynamics (CGD) and Mesoscale & Microscale Meteorology (MMM) divisions

1/2019 onwards: Assistant Professor, Department of Meteorology and Atmospheric Science, Pennsylvania State University

**Weiye Yao**, Ph.D. in Atmospheric and Space Science and Scientific Computing, University of Michigan, graduation in December 2014. Chair.

1/2015-4/2017: Postdoctoral Fellow, Geophysical Fluid Dynamics Laboratory (GFDL), Princeton, NJ

since 5/2017: Software Engineer at Bloomberg, New York City, NY

**Gregory Tierney**, Ph.D. in Atmospheric and Space Sciences, University of Michigan, graduation in August 2017. Co-chair in collaboration with Dr. Derek Posselt (NASA JPL)

since 9/2017: Postdoctoral Fellow, North Carolina State University, Raleigh, NC

**Jared Ferguson**, Ph.D. Candidate, University of Michigan, Applied Physics Program, graduation in August 2018. Chair.

11/2018 – 10/2019: California Council on Science and Technology (CCST) Policy Fellow, Sacramento, CA

**M.S. students (alumni):**

**Diana Thatcher**, M.S. in Atmospheric Science (9/2012-12/2015), University of Michigan, graduation in May 2015.

**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 and qualifying examination committees (excluding the departmental qualifying exams):**

**Lei Wang**, Ph.D. candidate, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), external 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), co-chair, 7/31/2010

**Shu-Meir Wang**, Ph.D. candidate, Stony Brook University, School of Marine and Atmospheric Science, external committee member, 10/25/2012

**Alexander Gvakharia**, Ph.D. candidate, University of Michigan, Applied Physics Program, qualifying exam, committee member, 6/3/2014

**Jared Ferguson**, Ph.D. candidate, University of Michigan, Applied Physics Program, chair, 9/4/2014

**Hong Shen**, University of Michigan, Department of Earth and Environmental Sciences, external committee member, 3/14/2016 and 8/18/2016

**Ryan K. Whitcomb**, Ph.D. candidate, University of Michigan, Applied Physics Program, committee member, 4/13/2016

**Rahul Gogna**, Ph.D. student, University of Michigan, Applied Physics Program, qualifying exam, committee member, 8/10/2016

**Ph.D. dissertation committees:**

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

**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

**Kevin A. Reed**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D. committee chair, 1/18/2012

**Loc Khieu**, University of Michigan, Department of Aerospace Engineering, external Ph.D. committee member, 4/27/2012

**Xi Chen**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D. committee member, 11/30/2012

**Peter Bosler**, University of Michigan, Department of Mathematics, Program in Applied Interdisciplinary Mathematics (AIM), Ph.D. co-chair, 4/25/2013

**Jianping Xiao**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D. committee member, 4/16/2014

**Colin Zarzycki**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D. committee chair, 4/22/2014

**Soner Yorgun**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D. committee member, 6/27/2014

**Matthias Aechtner**, McMaster University, Computational Science and Engineering, Hamilton, Canada, Ph.D. external reader, 9/3/2014

**Weiyao Yao**, University of Michigan, Department of Atmospheric, Oceanic and Space Sciences, Ph.D. committee chair, 11/18/2014

**Shu-Meir Wang**, Stony Brook University, School of Marine and Atmospheric Science, external Ph.D. committee member, 5/7/2015

**Chaoyi Jiao**, University of Michigan, Department of Climate and Space Sciences and Engineering, Ph.D. committee member, 12/8/2015

**Fei Hei**, University of Michigan, Department of Climate and Space Sciences and Engineering, Ph.D. committee member, 3/11/2016

**Gregory Tierney**, University of Michigan, Department of Climate and Space Sciences and Engineering, Ph.D. chair with co-chair Derek Posselt, 7/21/2017

**Kyle Ding**, University of Michigan, Department of Aerospace Engineering, external Ph.D. committee member, Feb/9/2018

**Jared Ferguson**, University of Michigan, Applied Physics Program. Ph.D. chair, Aug/16/2018

**Annareli Morales**, University of Michigan, Department of Climate and Space Sciences and Engineering, Ph.D. committee member, expected: June 2019

**Xiaojing Du**, University of Michigan, Department of Earth and Environmental Sciences, external Ph.D. committee member, expected: 2019

**Hong Shen**, University of Michigan, Department of Earth and Environmental Sciences, external committee member, expected 2019

**Paige Martin**, University of Michigan, Department of Earth and Environmental Sciences, external committee member, expected April 2019

**Undergraduate research projects:****Allison Hogikyan** (9/1/2014 – 12/2015)

Allison's current research focuses on the dynamical cores of General Circulation Models, which she pairs with simplified physical parameterizations like the warm-rain Kessler-type moisture scheme.

**Erik Kostrzewa** (5/1/2014 – 12/2014)

Erik's research addresses the representation of simplified precipitation processes in idealized GCM simulations. In particular, he assesses large-scale condensation with a re-evaporation mechanisms for flows over orography.

**James Kessler**, 5/1/2013-12/31/2013

REU internship and AOSS499 Directed Study: James' research focuses on the results of the 2012 Dynamical Core Model Intercomparison Project (DCMIP).

**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 Transformed-Eulerian Mean Equations in idealized GCM dynamical core simulations.

**Summer schools:****Dynamical Core Model Intercomparison Project (DCMIP-2016)** and two-week Summer School (June 5-17, 2016)

National Center for Atmospheric Research, Boulder, CO

Organizing team: Paul A. Ullrich (University of California, Davis), Christiane Jablonowski (University of Michigan), James Kent (University of South Wales), Kevin Reed (Stony Brook University), Colin Zarzycki, Peter H. Lauritzen and Ram Nair (NCAR)

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

DCMIP-2016 evaluated the state-of-the-art of nonhydrostatic dynamical core modeling. As DCMIP-2012, the objectives of DCMIP-2016 were (1) to teach a group of about 50 multi-disciplinary students and postdocs how today's and future non-hydrostatic atmospheric models are or need to be designed and built, (2) to invite about 12 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. DCMIP-2016 had been endorsed by the World Meteorological Organization (WMO) Working Group on Numerical Experimentation (WGNE).

**Future-Generation Non-Hydrostatic Weather and Climate Models**, lead-organizer of and lecturer at the **Dynamical Core Model Intercomparison Project (DCMIP-2012)** and two-week Summer School (July 30 –



August/10, 2012)

National Center for Atmospheric Research, Boulder, CO

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

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

The objectives of DCMIP-2012 were (1) to teach a group of about 35 multi-disciplinary students and postdocs 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 mimicked our highly successful 2008 NCAR Advanced Study Program Colloquium (see also below or <http://www.asp.ucar.edu/colloquium/2008/>). The summer school included morning lectures and afternoon hands-on model intercomparison sessions in partnership with a modeling mentor. The latter enabled 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 shared and discussed the results immediately through a novel cyber-infrastructure tool that was prototyped during the summer school. The 2012 NCAR summer school and model intercomparison project had 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 (SC) Conference

- SC'18 in Dallas, CO, USA, November 11, 2018
- SC'17 in Denver, CO, USA, November 12, 2017
- SC'16 in Salt Lake City, UT, USA, November 13, 2016
- SC'15 in Austin, TX, USA, November 15, 2015
- SC'14 in New Orleans, LA, USA, November 14, 2014

- SC'13 in Denver, CO, USA, November 17, 2013
- SC'10 in New Orleans, LA, USA, November 14, 2010
- SC'09 in Portland, OR, USA, November 15, 2009
- SC'08 in Austin, TX, USA, November 16, 2008
- SC'07 in Reno, NV, USA, November 11, 2007
- SC'06 in Tampa, FL, USA, November 12, 2006
- SC'05 in Seattle, WA, USA, November 12, 2005
- SC'04 in Pittsburgh, PA, USA, November 07, 2004
- SC'01 in Denver, Colorado, USA, November 11, 2001, (Introduction to Effective Parallel Computing)
- SC'00 in Dallas, Texas, USA, November 5, 2000 (Introduction to Effective Parallel Computing)

**Parallel Computing 101**, Quentin Stout and Christiane Jablonowski, Full-day tutorial at NASA Langley, May/22/2017

**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

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

**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, 2001

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## STUDENT HONORS, STUDENT AWARDS, FELLOWSHIPS & INTERNSHIPS

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<b>California Council on Science and Technology (CCST) Policy Fellowship</b> Jared Ferguson	Nov. 2018 onwards
<b>NSF Graduate Research Fellowship</b> Garrett Limon	Sep. 2018 onwards
<b>AMS Summer Policy Colloquium</b> American Meteorological Society (AMS), Washington, DC, USA Invited Participant (NSF-funded): Jared Ferguson	Jun. 4 – Jun. 13, 2017
<b>Rackham Predoctoral Fellowship, University of Michigan</b> Jared Ferguson	May 2017 - Apr. 2018
<b>Richard and Eleanor Towner Prize for Outstanding Ph.D. Research, Honorable Mention Award</b> UM 2016 CoE Engineering Graduate Symposium Jared Ferguson	Nov. 11, 2016
<b>Michigan Institute for Computational Discovery and Engineering (MICDE) Fellowship</b> Jared Ferguson	May 2016

- DoE Office of Science Graduate Student Research (SCGSR) award** May-Sep. 2016  
for a summer research project at the Lawrence Berkeley National Laboratory  
Jared Ferguson
- AOSS Finalist for the Richard and Eleanor Towner Prize for Outstanding Ph.D. Research**, UM 2015 CoE Engineering Graduate Symposium, Oct. 30, 2015  
Diana Thatcher
- Ernest F. Hollings Undergraduate Scholarship** Apr. 2015  
National Oceanic and Atmospheric Administration (NOAA)  
2-year undergraduate scholarship (Sep. 2015- April 2017)  
with a summer research experience at a NOAA laboratory (summer 2016)  
Allison Hogikyan
- 2<sup>nd</sup> place: Michigan Geophysical Union (MGU) Student Research Symposium** Apr. 1, 2015  
Ann Arbor, MI, category *Climate and Meteorology*  
Jared Ferguson  
poster: Jared Ferguson, Christiane Jablonowski et al., *Assessing adaptive grid refinement techniques with the Chombo-AMR model in shallow water mode*
- Graduate Visitor Fellowship**, National Center for Atmospheric Research Feb-Aug. 2015  
NCAR Advanced Study Program (ASP)  
Diana Thatcher
- 2014 Rackham Proquest Distinguished Dissertation Award Competition Honorable Mention Award**, University of Michigan Feb. 2015  
Colin Zarzycki
- People's Choice Award (Poster competition)** Nov. 6, 2014  
**Michigan Institute for Computational Discovery and Engineering (MICDE) Fall 2014 Research Computing Symposium**  
Diana Thatcher  
poster: Diana R. Thatcher and Christiane Jablonowski, *Intercomparison of numerical methods in climate simulations with idealized moisture parameterization*
- AGU Newsletter "AGUniverse" Publication Highlight** Nov. 6, 2014  
Authors: Colin Zarzycki and Christiane Jablonowski  
Paper: "A multidecadal simulation of Atlantic tropical cyclones using a variable-resolution global atmospheric general circulation model"  
in the AGU journal "Journal of Advances in Modeling Earth Systems" (JAMES)
- NCAR Postdoctoral Fellowship, Advanced Study Program (ASP)** Sep. 2014 – Aug. 2016  
National Center for Atmospheric Research, Boulder, CO  
Colin Zarzycki
- John von Neumann Postdoctoral Research Fellow in Computational Science** Aug. 2014 – Mar. 2016  
Sandia National Laboratory  
Peter Bosler
- Graduate Visitor Fellowship**, National Center for Atmospheric Research May-Jul. 2014  
Weiye Yao
- Michigan Institute for Computational Discovery and Engineering (MICDE) Fellowship** May 2014

Diana Thatcher

- AOSS Finalist for the Richard and Eleanor Towner Prize for Outstanding Ph.D. Research**, UM 2013 CoE Engineering Graduate Symposium, Weiye Yao Nov. 15, 2013
- 1<sup>st</sup> place at the UM 2013 College of Engineering Graduate Symposium (EGS)** Nov. 15, 2013  
Ann Arbor, MI, category *Atmospheric and Climate Sciences*  
Diana Thatcher  
poster: Thatcher, D. and C. Jablonowski, *Comparison of a moist idealized test case and aquaplanet simulations in an atmospheric general circulation model*
- AGU Travel Award, Fall 2013 meeting** Sep. 5, 2013  
Diana Thatcher
- 1<sup>st</sup> place: Michigan Geophysical Union (MGU) Student Research Symposium and winner of the Student Choice Award** Apr. 3, 2013  
Ann Arbor, MI, category *Climate and Meteorology*  
Weiye Yao  
poster: Weiye Yao and Christiane Jablonowski, *The influence of convection in idealized simulations of the Quasi-biennial Oscillation with different dynamical cores*
- Rackham Predoctoral Fellowship, University of Michigan** May 2013 – Apr. 2014  
Colin Zarzycki
- 2012 Rackham Proquest Distinguished Dissertation Award Competition Honorable Mention Award**, University of Michigan Feb. 2013  
Kevin Reed  
10 awardees, and 11 honorable mention awardees were honored out of all 750 Ph.D. dissertations at UM in 2012
- American Meteorological Society (AMS) Best Oral Presentation Award** Jan. 30, 2013  
93rd Annual AMS Meeting: Weather Analysis and Forecasting Symposium, Austin, TX  
Colin Zarzycki, presentation:  
Zarzycki, C. M., C. Jablonowski, M. A. Taylor: *Assessing the Ability of Variable-Resolution Global Models to Forecast Tropical Cyclones*
- NCAR Postdoctoral Fellowship, Advanced Study Program (ASP)** Sep. 2013 – Aug. 2015  
National Center for Atmospheric Research, Boulder, CO  
Kevin Reed
- 1<sup>st</sup> place at the UM 2012 College of Engineering Graduate Symposium (EGS)** Nov. 2, 2012  
Ann Arbor, MI, category *Earth Sciences and Remote Sensing*  
Colin Zarzycki  
poster: Zarzycki, C. M. and C. Jablonowski, *Improving weather prediction and regional climate modeling through the use of variable-resolution global atmospheric models*
- Rackham Merit Fellowship, University of Michigan** Sep. 2012 – Apr. 2014  
Diana Thatcher
- AGU Congressional Science Fellowship, Washington D.C.** Sep. 2012 – Aug. 2013

Kevin Reed

**Isaac Newton Institute for Mathematical Sciences, Cambridge, U.K.**

Aug. 22 – Oct. 27, 2012

Invited long-term participant of the program

*Multiscale Numerics for the Atmosphere and Ocean*

Colin Zarzycki

**NCAR Advanced Study Program Summer Colloquium**

Jun. 4-22, 2012

*The Weather-Climate Intersection: Advances and Challenges*, Boulder, CO, USA

Invited Participant: Weiye Yao

**NSF Graduate Fellowship**

Mar. 2012

former undergraduate student: Michael Glotter (now University of Chicago)

**NSF Mathematical Sciences Postdoctoral Research Fellowship (MSPRF)**

Jan. 2012

Jared Whitehead (declined)

**Travel award: 23rd AMS Conference on Climate Variability and Change**

Jan. 22-26, 2012

New Orleans, LA, USA

Kevin Reed

**American Geophysical Union (AGU) Outstanding Student Paper Award**

Mar. 31, 2011

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

**American Geophysical Union (AGU) Outstanding Student Paper Award**

Mar. 31, 2011

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

**CoE Graduate Distinguished Achievement Award, University of Michigan**

Mar. 20, 2011

Kevin Reed

**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

Kevin Reed

poster: Reed, K. A. and C. Jablonowski, *Evaluating the Impact of the CAM 5 Dynamical Core in Idealized Tropical Cyclone Simulations*

**AOSS Finalist: Outstanding Ph.D. Student Research Award**

Nov. 12, 2010

**at the UM 2010 CoE Engineering Graduate Symposium**, Ann Arbor, MI

Paul Ullrich

poster: 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)  
Graduate Research Environmental Fellowship (GREF)** Sep. 2010 – Aug. 2012  
Kevin Reed
- Rackham Predoctoral Fellowship, University of Michigan** May 2010 – Apr. 2011  
Paul Ullrich
- Travel award: Summer School on Atmospheric Modeling (SSAM)  
Boulder, CO, USA,** Jul. 19-21, 2010  
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  
Jared Whitehead  
poster: Whitehead, J., C. Jablonowski and R. B. Rood  
*Divergence Damping: Is Additional Diffusion 'Good' for Stability?*
- Summer Internship in Parallel Computational Science (SIParCS)** Jun 2009 – Aug. 2009  
National Center for Atmospheric Research (NCAR), Boulder, CO, USA  
Computational & Information Systems Laboratory (CISL)  
Peter Bosler
- AMS Summer Policy Colloquium** May 31 – Jun. 9, 2009  
American Meteorological Society (AMS), Washington, DC, USA  
Invited Participant (NSF-funded): Kevin Reed
- 1<sup>st</sup> place (poster presentation) and 2<sup>nd</sup> place (oral presentation) at the UM** Nov. 13, 2008  
2008 CoE Engineering Graduate Symposium, category *Civil, Environmental and  
Atmospheric Sciences*  
Paul Ullrich  
presentation: 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  
Paul Ullrich

Sep. 2007 – Apr. 2008

## PUBLICATIONS

### Refereed Journal Papers

- Ferguson, J. O., C. Jablonowski, and H. Johansen (2019), **Assessing Adaptive Mesh Refinement (AMR) in a Forced Shallow-Water Model with Moisture**, *Mon. Wea. Rev.*, in review
- Zarzycki, C. M., C. Jablonowski, J. Kent, P. H. Lauritzen, R. Nair, K. A. Reed, P. A. Ullrich, D. M. Hall, D. Dazlich, R. Heikes, C. Konor, D. Randall, X. Chen, L. Harris, M. Giorgetta, D. Reinert, C. Kühnlein, R. Walko, V. Lee, A. Qaddouri, M. Tanguay, H. Miura, T. Ohno, R. Yoshida, S.-H. Park, J. Klemp, and W. Skamarock (2019), **DCMIP2016: The Splitting Supercell Test Case**, *Geosci. Model Dev. Discuss.*, <https://doi.org/10.5194/gmd-2018-156>, in review
- Gross, M., H. Wan, P. J. Rasch, P. M. Caldwell, D. L. Williamson, D. Klocke, C. Jablonowski, D. R. Thatcher, N. Wood, M. Cullen, B. Beare, M. Willett, F. Lemarie, E. Blayo, S. Malardel, P. Termonia, P. Bechtold, A. Gassmann, P. H. Lauritzen, H. Johansen, C. M. Zarzycki, K. Sakaguchi and R. Leung (2018), **Physics–Dynamics Coupling in weather, climate and Earth system models: Challenges and recent progress**, *Mon. Wea. Rev.*, Vol. 146, 3505-3544
- Ullrich, P. A. C. Jablonowski, J. Kent, P. H. Lauritzen, R. Nair, K. A. Reed, C. M. Zarzycki, D. M. Hall, D. Dazlich, R. Heikes, C. Konor, D. Randall, T. Dubos, Y. Meurdesoif, X. Chen, L. Harris, C. Kühnlein, V. Lee, A. Qaddouri, C. Girard, M. Giorgetta, D. Reinert, J. Klemp, S.-H. Park, W. Skamarock, H. Miura, T. Ohno, R. Yoshida, R. Walko, A. Reinecke and K. Viner (2017), **DCMIP2016: A Review of Non-hydrostatic Dynamical Core Design and Intercomparison of Participating Models**, *Geosci. Model Dev.*, Vol. 10, 4477-4509, doi: 10.5194/gmd-2017-108
- Bosler, P. A., J. Kent, R. Krasny and C. Jablonowski (2017), **A Lagrangian Particle Method with Remeshing for Tracer Transport on the Sphere**, *J. Comput. Phys.*, Vol. 340, 639-654
- Zarzycki, C. M., D. R. Thatcher and C. Jablonowski (2017), **Objective tropical cyclone extratropical transition detection in high-resolution reanalysis and climate model data**, *J. Adv. Model. Earth Syst.*, Vol. 9, 130-148, doi:10.1002/2016MS000775
- Ferguson, J. O., C. Jablonowski, H. Johansen, P. McCorquodale, P. Colella and P. A. Ullrich (2016), **Analyzing the Adaptive Mesh Refinement (AMR) characteristics of a high-order 2D cubed-sphere shallow-water model**, *Mon. Wea. Rev.*, Vol. 144, 4641–4666
- Yao, W. and C. Jablonowski (2016), **The Impact of GCM Dynamical Cores on Idealized Sudden Stratospheric Warmings and their QBO Interactions**, *J. Atmos. Sci.*, Vol. 73, 3397–3421, doi:10.1175/JAS-D-15-0242.1
- Hall, D. M., P. A. Ullrich, K. A. Reed, C. Jablonowski, R. D. Nair and H. M. Tufo (2016), **Dynamical Core Model Intercomparison Project (DCMIP) Tracer Transport Test Results for CAM-SE**, *Quart. J. Roy. Meteorol. Soc.*, Vol. 142, 1672-1684
- Thatcher, D. R. and C. Jablonowski (2016), **A moist aquaplanet variant of the Held-Suarez test for atmospheric model dynamical cores**, *Geosci. Model Dev.*, Vol. 9, 1263-1292
- Kent, J., C. Jablonowski, J. Thuburn and N. Wood (2016), **An Energy Conserving Restoration Scheme for the Shallow Water Equations**, *Quart. J. Roy. Meteorol. Soc.*, Vol. 142, 1100-1110
- Gross, M., S. Malardel, C. Jablonowski and N. Wood (2016), **Bridging the (Knowledge) Gap between Physics and Dynamics**, *Bull. Amer. Meteorol. Soc.*, Vol. 97, 137–142, doi:10.1175/BAMS-D-15-00103.1

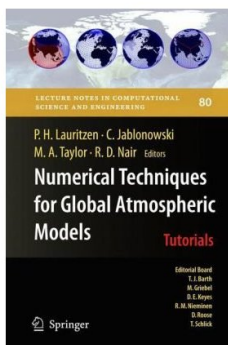
- Ullrich, P. A., K. A. Reed and C. Jablonowski (2015), **Analytical initial conditions and an analysis of baroclinic instability waves in f- and  $\beta$ -plane 3D channel models**, *Quart. J. Roy. Meteorol. Soc.*, Vol. 141, 2972-2988
- Thatcher, D. R. and C. Jablonowski (2015), **A moist aquaplanet variant of the Held-Suarez test for atmospheric model dynamical cores**, *Geosci. Model Dev. Discuss.*, Vol. 8, 8263-8340, doi:10.5194/gmdd-8-8263-2015
- Zarzycki, C. M. and C. Jablonowski (2015), **Experimental Tropical Cyclone Forecasts using a Variable-Resolution Global Model**, *Mon. Wea. Rev.*, Vol. 143, 4012-4037
- Walsh, K. J. E., S. J. Camargo, G. A. Vecchi, A. S. Daloz, J. Elsner, K. Emanuel, M. Horn, Y.-K. Lim, M. Roberts, C. Patricola, E. Scoccimarro, A. H. Sobel, S. Strazzo, G. Villarini, M. Wehner, M. Zhao, J. Kossin, T. LaRow, K. Oouchi, S. Schubert, H. Wang, J. Bacmeister, P. Chang, F. Chauvin, C. Jablonowski, A. Kumar, H. Murakami, T. Ose, K. A. Reed, R. Saravanan, Y. Yamada, C. M. Zarzycki, P. L. Vidale, J. A. Jonas and N. Henderson (2015), **Hurricanes and climate: the U.S. CLIVAR working group on hurricanes**, *Bull. Amer. Meteorol. Soc.*, Vol. 96, 997-1017, doi:10.1175/BAMS-D-13-00242.1
- Yao, W. and C. Jablonowski (2015), **Idealized Quasi-Biennial Oscillations in an Ensemble of Dry GCM Dynamical Cores**, *J. Atmos. Sci.*, Vol. 72, 2201-2226
- Wan, H., P. J. Rasch, M. A. Taylor and C. Jablonowski (2015), **Short-term time step convergence in a climate model**, *J. Adv. Model. Earth Syst.*, Vol. 7, 215-225, doi:10.1002/2014MS000368.
- He, F., D. J. Posselt, C. M. Zarzycki and C. Jablonowski (2015), **A Balanced Tropical Cyclone Test Case for AGCMs with Background Vertical Wind Shear**, *Mon. Wea. Rev.*, Vol. 143, 1762-1781
- Whitehead, J. P., C. Jablonowski, J. Kent and R. B. Rood (2015), **Potential vorticity: Measuring consistency between GCM dynamical cores and tracer advection schemes**, *Quart. J. Roy. Meteorol. Soc.*, Vol. 141, 739-751
- Zarzycki, C. M., C. Jablonowski, D. R. Thatcher and M. A. Taylor (2015), **Effects of localized grid refinement on the general circulation and climatology in the Community Atmosphere Model**, *J. Climate*, Vol. 28, 2777-2803
- Wehner, M. F., K. A. Reed, F. Li, Prabhat, J. Bacmeister, C.-T. Chen, C. Paciorek, P. J. Gleckler, K. R. Sperber, W. D. Collins, A. Gettelman, C. Jablonowski and C. Algieri (2014), **The effect of horizontal resolution on simulation quality in the Community Atmospheric Model, CAM5.1**, *J. Adv. Model. Earth Syst.*, Vol. 6, 980-997
- Zarzycki, C. M. and C. Jablonowski (2014), **A multidecadal simulation of Atlantic tropical cyclones using a variable-resolution global atmospheric general circulation model**, *J. Adv. Model. Earth Syst.*, Vol. 6, 805-828
- Kent, J., C. Jablonowski, J. P. Whitehead and R. B. Rood (2014), **Determining the Effective Resolution of Advection Schemes. Part II: Numerical Testing**, *J. Comput. Phys.*, Vol. 278, 497-508
- Kent, J., J. P. Whitehead, C. Jablonowski and R. B. Rood (2014), **Determining the Effective Resolution of Advection Schemes. Part I: Dispersion Analysis**, *J. Comput. Phys.*, Vol. 278, 485-496
- Ullrich, P. A., T. Melvin, C. Jablonowski and A. Staniforth (2014), **A proposed baroclinic wave test case for deep- and shallow-atmosphere dynamical cores**, *Quart. J. Roy. Meteorol. Soc.*, Vol. 140, 1590-1602
- Zarzycki, C. M., M. N. Levy, C. Jablonowski, M. A. Taylor, J. R. Overfelt and P. A. Ullrich (2014), **Aquaplanet Experiments Using CAM's Variable Resolution Dynamical Core**, *J. Climate*, Vol. 27, 5481-5503



- Bosler, P., L. Wang, R. Krasny and C. Jablonowski (2014), **A Particle/Panel Method for the Barotropic Vorticity Equation on a Rotating Sphere**, Fluid Dynamics Research, Vol. 46, 031406, doi:10.1088/0169-5983/46/3/031406
- Kent, J., P. A. Ullrich and C. Jablonowski (2014), **Dynamical Core Model Intercomparison Project: Tracer Transport Test Cases**, Quart. J. Roy. Meteorol. Soc., Vol. 140, 1279–1293
- Ullrich, P. A., C. Jablonowski and P. H. Lauritzen (2014), **A high-order 'incremental-remap'-based semi-Lagrangian shallow water model**, International Journal for Numerical Methods in Fluids, Vol. 75, 103–133
- Zarzycki, C. M., C. Jablonowski and M. A. Taylor (2014), **Using Variable Resolution Meshes to Model Tropical Cyclones in the Community Atmosphere Model**, Mon. Wea. Rev., Vol. 142, 1221-1239
- Lauritzen, P. H., P.A. Ullrich, C. Jablonowski, P.A. Bosler, D. Calhoun, A.J. Conley, T. Enomoto, L. Dong, S. Dubey, O. Guba, A. B. Hansen, E. Kaas, J. Kent, J. F. Lamarque, M. J. Prather, D. Reinert, V. V. Shashkin, W. C. Skamarock, B. Sørensen, M. A. Taylor, and M. A. Tolstykh (2014), **A standard test case suite for two-dimensional linear transport on the sphere: results from a collection of state-of-the-art schemes**, Geoscientific Model Development, Vol. 7, 105–145
- Yao, W. and C. Jablonowski (2013), **Spontaneous QBO-like Oscillations in an Atmospheric Model Dynamical Core**, Geophys. Res. Lett., Vol. 40, 3772–3776, doi:10.1002/grl.50723
- Chen, X., N. Andronova, B. Van Leer, J. E. Penner, J. P. Boyd, C. Jablonowski and S.-J. Lin (2013), **A Control-Volume Model of the Compressible Euler Equations with a Vertical Lagrangian Coordinate**, Mon. Wea. Rev., Vol. 141, 2526-2544
- Ullrich, P. A., P. H. Lauritzen and C. Jablonowski (2013), **Some considerations for high-order 'incremental remap'-based transport schemes: edges, reconstructions and area integration**, International Journal for Numerical Methods in Fluids, Vol. 71, 1131-1151
- Kent, J., C. Jablonowski, J. P. Whitehead and R. B. Rood (2012), **Downscale Cascades in Tracer Transport Test Cases: An intercomparison of the dynamical cores in the Community Atmosphere Model CAM5**, Geoscientific Model Development, Vol. 5, 1517-1530
- Lebonnois, S., C. Covey, A. Grossmann, H. Parish, G. Schubert, R. Walterscheid, P. Lauritzen and C. Jablonowski (2012), **Angular Momentum Budget in General Circulation Models of Superrotating Atmospheres: A Critical Diagnostic**, Journal of Geophysical Research (Planets), Vol. 117, E12004, doi:10.1029/2012JE004223
- 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., 13, 303-310, doi:10.1002/asl.399
- 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., Vol. 4, M04001, doi:10.1029/2011MS000099
- Ullrich, P. A. and C. Jablonowski (2012b), **MCore: A Non-hydrostatic Atmospheric Dynamical Core Utilizing High-Order Finite-Volume Methods**, J. Comput. Phys., Vol. 231, 5078-5108
- Ullrich, P. A. and C. Jablonowski (2012a), **Operator-Split Runge-Kutta-Rosenbrock 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

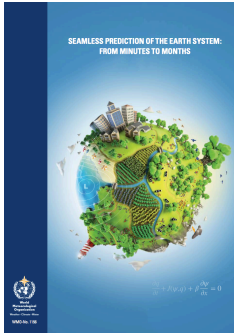
- Reed, K. A. and C. Jablonowski (2011c), **Assessing the Uncertainty in Tropical Cyclone Simulations in NCAR's Community Atmosphere Model**, J. Adv. Model. Earth Syst., Vol. 3, Art. 2011MS000076, 16 pp.
- Reed, K. A. and C. Jablonowski (2011b), **Impact of physical parameterizations on idealized tropical cyclones in the Community Atmosphere Model**, Geophys. Res. Lett., Vol. 38, L04805
- 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 1D Finite-Volume Methods for Geophysical Problems on Refined Grids**, J. Comput. Phys., Vol. 230, 706-725
- Ullrich, P. A., C. Jablonowski and B. van Leer (2010), **High-order finite-volume methods 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.
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- 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
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- 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 and Refereed Book Chapters



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.

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



WMO Book:

***Seamless Prediction of the Earth System: from Minutes to Months***

Côté, J., C. Jablonowski, P. Bauer and N. Wedi (2015), **Numerical Methods of the Atmosphere and Ocean**, in: Brunet, G., S Jones and P. M. Ruti (Eds.), *Seamless Prediction of the Earth System: from Minutes to Months*, World Meteorological Organization (WMO) No. 1156, Geneva, available online: [http://library.wmo.int/pmb\\_ged/wmo\\_1156\\_en.pdf](http://library.wmo.int/pmb_ged/wmo_1156_en.pdf)

### 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>

Penner, J. E., M. Herzog, C. Jablonowski, B. van Leer, R. C. Oehmke, Q. F. Stout, and K. G. Powell (2005), **Development of an atmospheric climate model with self-adapting grid and physics**, Journal of Physics: Conference Series, 16, 353-357

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

Broeker, O., K. Cassirer, R. Hess, C. Jablonowski, W. Joppich and S. Pott (1997), **Contributions to the Design of a Grid Oriented Global Weather Forecast Model**, in: A. Sydow, Editor, Proceedings of the 15<sup>th</sup> World Congress on Scientific Computing, Modeling and Applied Mathematics - IMACS, Berlin, 1997, published by: Wissenschaft und Technik Verlag.

### Technical Reports

Ullrich, P.A., C. Jablonowski, J. Kent, P. H. Lauritzen, R. D. Nair, M. A. Taylor (2012), **Dynamical Core Model Intercomparison Project (DCMIP) Test Case Document**, Version 1.7, download from [https://www.earthsystemcog.org/projects/dcmip-2012/test\\_cases](https://www.earthsystemcog.org/projects/dcmip-2012/test_cases)

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.

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Payne, A. E. and C. Jablonowski (2018), **Mesoscale Convective Systems within Variable-resolution CESM**, American Geophysical Union (AGU) Fall Meeting 2018, Abstract A54H-18

Jablonowski, C., J. Ferguson, H. Johansen and P. Colella (2018), **An Adaptive Mesh Refinement (AMR) Framework for Future Weather and Climate Models**, American Geophysical Union (AGU) Fall Meeting 2018, Abstract A32F-445487

Jablonowski, C., J. Ferguson, H. Johansen, P. Colella (2018), **Dynamic Grid Adaptations in Moist 2D Shallow Water and 3D Nonhydrostatic Dynamical Cores**, European Geosciences Union (EGU) General Assembly, Abstract EGU2018-11638

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale, P. A. Ullrich, W. Langhans and W. Collins (2017), **Capturing Multiscale Phenomena via Adaptive Mesh Refinement (AMR) in 2D and 3D Atmospheric Flows**, American Geophysical Union (AGU) Fall Meeting 2017, Abstract A31J-2321

Payne, A. E. and C. Jablonowski (2017), **Evaluation of a Mesoscale Convective System in Variable-Resolution CESM**, American Geophysical Union (AGU) Fall Meeting 2017, Abstract A12C-03

Jablonowski, C., P. A. Ullrich, K. A. Reed, C. M. Zarzycki, J. Kent, P. H. Lauritzen and R. Nair (2017), **Highlights from the 2016 Dynamical Core Model Intercomparison Project (DCMIP-2016)**, European Geosciences Union (EGU) General Assembly, Abstract EGU2017-19539

Ferguson, J., C. Jablonowski, H. Johansen, E. Goodfriend, P. McCorquodale (2016), **Bridging Scales with a High-Order Adaptive Mesh Refinement Dynamical Core**, American Geophysical Union (AGU) Fall Meeting 2016, Abstract A34A-06

Jablonowski, C., C. M. Zarzycki, K. A. Reed, P. A. Ullrich, J. Kent, P. H. Lauritzen and R. D. Nair (2016), **The Dynamical Core Model Intercomparison Project (DCMIP-2016): Results of the Moist Baroclinic Wave Test Case**, American Geophysical Union (AGU) Fall Meeting 2016, Abstract A31A-0001

Reed, K. A., C. Jablonowski, C. M. Zarzycki, P. A. Ullrich, J. Kent, P. H. Lauritzen and R. D. Nair (2016), **The Dynamical Core Model Intercomparison Project (DCMIP-2016): Results of the Tropical Cyclone Test Case**, American Geophysical Union (AGU) Fall Meeting 2016, Abstract A31A-0002

Zarzycki, C. M., K. A. Reed, C. Jablonowski, P. A. Ullrich, J. Kent, P. H. Lauritzen and R. D. Nair (2016), **The Dynamical Core Model Intercomparison Project (DCMIP-2016): Results of the Supercell Test Case**, American Geophysical Union (AGU) Fall Meeting 2016, Abstract A31A-0003

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale and P. A. Ullrich (2015), **Using the Chombo**

**Adaptive Mesh Refinement Model in Shallow Water Mode to Simulate Interactions of Tropical Cyclone-like Vortices**, American Geophysical Union (AGU) Fall Meeting 2015, Abstract NG23A-1769

Thatcher, D. R., C. M. Zarzycki and C. Jablonowski (2015), **Extratropical Transition of Tropical Cyclones in the North Atlantic: Multi-Decadal Climatology and Phase Space Analysis using a Variable-Resolution GCM**, American Geophysical Union (AGU) Fall Meeting 2015, Abstract A51P-0315

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Zarzycki, C. M. and C. Jablonowski (2014), **Improving Tropical Cyclone Track and Intensity in a Global Model with Local Mesh Refinement**, American Geophysical Union (AGU) Fall Meeting 2014, Abstract A13R-06

Kent, J., C. Jablonowski and R. B. Rood (2014), **Diagnosing Energy and Potential Enstrophy Transfers in Dynamical Cores of GCMs**, American Geophysical Union (AGU) Fall Meeting 2014, Abstract A21B-3018

Thatcher, D. R., C. M. Zarzycki, J. Ferguson and C. Jablonowski (2014), **Extratropical Transition Using 23 Years of Tropical Cyclones in a Variable-Resolution Global GCM**, American Geophysical Union (AGU) Fall Meeting 2014, Abstract A33L-3379

Bosler, P., R. Krasny and C. Jablonowski (2014), **Adaptive Particle / Panel Methods for Global Geophysical Flow**, American Geophysical Union (AGU) Fall Meeting 2014, Abstract A21A-3009

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Kent, J., C. Jablonowski, J. Thuburn and N. Wood (2014), **An Energy Backscatter Model For The Shallow Water Equations On The Sphere**, Geophysical Research Abstracts, Vol. 16, EGU2014-3085, EGU General Assembly 2014

Zarzycki, C. M. and C. Jablonowski (2013), **Evaluating the Impact of Localized GCM Grid Refinement on Regional Tropical Cyclone Climatology and Synoptic Variability using Variable-Resolution CAM-SE**, American Geophysical Union (AGU) Fall Meeting 2013, Abstract A42D-01

Thatcher, D., C. Jablonowski and C. Zarzycki (2013), **A Moist Idealized Test Case for Atmospheric General Circulation Models**, American Geophysical Union (AGU) Fall Meeting 2013, Abstract A33B-0202

Reed, K. A., C. Jablonowski, P. A. Ullrich, J. Kent, P. H. Lauritzen, M. A. Taylor and R. Nair (2013), **Multi-model GCM ensemble simulations of idealized tropical cyclones**, American Geophysical Union (AGU) Fall Meeting 2013, Abstract A33B-0219

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Zarzycki, C. M., C. Jablonowski and M. A. Taylor (2012), **Using the Variable-Resolution General Circulation Model CAM-SE to Simulate Regional Tropical Cyclone Climatology**, American Geophysical Union (AGU) Fall Meeting 2012, Abstract A31L-05

Yao, W. and C. Jablonowski (2012), **The influence of Convection and Gravity Wave Drag Parameterizations in Idealized Simulations of the Quasi-Biennial Oscillation With Different GCM Dynamical Cores**, American Geophysical Union (AGU) Fall Meeting 2012, Abstract A13Q-08

Kent, J., C. Jablonowski, J. Whitehead and R. B. Rood (2012), **Methods to Determine the Effective Resolution of Dynamical Cores of GCMs**, American Geophysical Union (AGU) Fall Meeting 2012, Abstract A52B-01

Ullrich, P. A., C. Jablonowski, J. Kent, K. A. Reed, M. A. Taylor, P. H. Lauritzen and R. D. Nair (2012). **Towards a Unified Test Case Suite for Global Atmospheric Models**, American Geophysical Union (AGU) Fall Meeting 2012, Abstract A53C-0159

Jablonowski, C., P. A. Ullrich, J. Kent, K. A. Reed, M. A. Taylor, P. H. Lauritzen and R. D. Nair (2012), **The 2012 Dynamical Core Model Intercomparison Project (DCMIP)**, American Geophysical Union (AGU) Fall Meeting 2012, Abstract A53C-0160

Murphy S., C. DeLuca, L. Cinquini, I. Overeem, P. N. Edwards, C. Jablonowski, R. B. Rood and V. Balaji (2012), **The Earth System CoG Collaboration Environment: Connecting Resources in the Earth Sciences**, American Geophysical Union (AGU) Fall Meeting 2012, Abstract IN51A-1683

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

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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

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## CONFERENCE AND SEMINAR PRESENTATIONS

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### 2018

Jablonowski, C., J. Ferguson, H. Johansen, P. Colella (2018), **An Adaptive Mesh Refinement (AMR) Framework for Future Weather and Climate Models**, oral presentation at the 2018 American Geophysical Union (AGU) Fall Meeting, Abstract A32F-445487, Washington, D.C., USA, December 10-14, 2018

Payne, A., C. Jablonowski, C. Zarzycki, J. Olson (2018), **Mesoscale Convective Systems within Variable-resolution CESM**, 2018 American Geophysical Union (AGU) Fall Meeting, Abstract A54H-18, Washington, D.C., USA, December 10-14, 2018

Jablonowski, C., J. Ferguson, H. Johansen, P. Colella (2018), **An Adaptive Mesh Refinement (AMR) Framework for 2D Shallow Water and 3D Nonhydrostatic Dynamical Cores**, oral presentation at the SIAM Conference on Mathematics of Planet Earth (SIAG/MPE), Philadelphia, PA, USA, September 13-15, 2018

Jablonowski, C., P. A. Ullrich, C. M. Zarzycki, K. A. Reed, J. Kent, P. H. Lauritzen and R. Nair (2018), **Analyzing Physics-Dynamics Coupling in an Ensemble of Simplified GCMs**, oral presentation at the 3rd Workshop on Physics-Dynamics Coupling (PDC18), European Centre for Medium-Range Weather Forecasts (ECMWF), Reading, U.K., July 10-12, 2018

Payne, A., C. Jablonowski, C. Zarzycki, J. Olson (2018), **Evaluation of a Mesoscale Convective Systems in Variable-Resolution CESM**, oral presentation at the 23rd Annual CESM Workshop, Boulder, CO, USA, June 18-21, 2018



Jablonowski, C., J. Ferguson, H. Johansen, P. Colella, C. Zarzycki (2018), **Trends in Earth System Modeling and Emerging Data Science Opportunities**, oral presentation at IRSA Conference on Statistics and Data Science for Earth Systems, Institute for Research in Statistics and its Applications (IRSA), Minneapolis, MN, May 3-5, 2018

Jablonowski, C., J. Ferguson, H. Johansen, P. Colella (2018), **Dynamic Grid Adaptations in Moist 2D Shallow Water and 3D Nonhydrostatic Dynamical Cores**, poster presentation at the European Geosciences Union (EGU) General Assembly, Abstract EGU2018-11638, Vienna, Austria, April 8-13, 2018

Jablonowski, C., P. A. Ullrich, C. M. Zarzycki, K. A. Reed, J. Kent, P. H. Lauritzen and R. Nair (2018), **Updated Results from the Dynamical Core Model Intercomparison Project (DCMIP-2016)**, oral presentation at the CESM Atmosphere Model Working Group (AMWG) Meeting, Boulder, CO, USA, February 12-14, 2018

Payne, A. E. and C. Jablonowski (2018), **Evaluation of a Mesoscale Convective System in Variable-Resolution CESM**, 98th AMS Annual Meeting and 32nd Conference on Hydrology, Austin, TX, USA, January 7-11, 2018

## 2017

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale, P. A. Ullrich, W. Langhans and W. Collins (2017), **Capturing Multiscale Phenomena via Adaptive Mesh Refinement (AMR) in 2D and 3D Atmospheric Flows**, poster presentation at the 2017 American Geophysical Union (AGU) Fall Meeting, Abstract A31J-2321, New Orleans, LA, USA, December 11-15, 2017

Payne, A. E. and C. Jablonowski (2017), **Evaluation of a Mesoscale Convective System in Variable-Resolution CESM**, oral presentation at the 2017 American Geophysical Union (AGU) Fall Meeting, Abstract A12C-03, New Orleans, LA, USA, December 11-15, 2017

Jablonowski, C., J. Ferguson, H. Johansen, P. Colella and W. Collins (2017), **Bridging Scales in Weather and Climate Models with Adaptive Mesh Refinement Techniques**, invited keynote presentation at the SIAM Conference on Mathematical and Computational Issues in the Geosciences, Erlangen, Germany, September 11-14, 2017

Johansen, H., W. Collins, J. Ferguson and C. Jablonowski (2017), **Implications of 3D refinement in non-hydrostatic atmospheric flows**, oral presentation at the International Conference on Scientific Computation And Differential Equations (SciCADE), Bath, U.K., September 11-15, 2017

Payne, A. and C. Jablonowski (2017), **Evaluation of Convection Parameterizations in Variable-Resolution CESM over the Southern Great Plains**, poster presentation at the 21st AMS Conference on Atmospheric and Oceanic Fluid Dynamics, Portland, OR, USA, June 26-30, 2017

Jablonowski, C. and W. Yao (2017), **An Analysis of Sudden Stratospheric Warmings and QBO-like Oscillations in Idealized General Circulation Models**, oral presentation at the 19th AMS Conference on the Middle Atmosphere, Portland, OR, USA, June 26-30, 2017

Payne, A., C. Jablonowski, J. Olson and C. Zarzycki (2017), **Evaluation of Convection Parameterizations in Variable-Resolution CESM over the Southern Great Plains**, poster presentation at the 22nd Annual CESM Workshop, Boulder, CO, USA, June 19-22, 2017

Collins, W., H. Johansen, C. Jablonowski and J. Ferguson (2017), **Demonstration of nonhydrostatic adaptive mesh dynamics for multiscale climate models**, 7th International Workshop on Advances in High-Performance Computational Earth Sciences (IHPCES), Zuerich, Switzerland, June 12-14, 2017

Jablonowski, C., P. A. Ullrich, K. A. Reed, C. M. Zarzycki, J. Kent, P. H. Lauritzen and R. Nair (2017), **Highlights from the 2016 Dynamical Core Model Intercomparison Project (DCMIP-2016)**, poster presentation at the European Geosciences Union (EGU) General Assembly, Abstract EGU2017-19539, Vienna, Austria, April 24-28, 2017



Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale, P. Colella, W. Langhans, P. Ullrich (2017), **Adaptive Mesh Refinement in 2D forced shallow-water and idealized 3D simulation**, poster presentation at the University of Michigan 2017 MICDE Symposium on ‘The New Era of Data-Enabled Computational Science’, Ann Arbor, MI, USA, April 18, 2017

Jablonowski, C., K. A. Reed, P. A. Ullrich, C. M. Zarzycki, J. Kent, P. H. Lauritzen and R. Nair (2017), **DCMIP-2016: Overview and Results of the Moist Baroclinic Wave Test Case**, oral presentation at the Workshop on Partial Differential Equations on the Sphere, Paris, France, April 3-7, 2017

Reed, K. A., C. Jablonowski, P. A. Ullrich, C. M. Zarzycki, J. Kent, P. H. Lauritzen and R. Nair (2017), **DCMIP-2016: Overview and Results of the Tropical Cyclone and Supercell Test Cases**, oral presentation at the Workshop on Partial Differential Equations on the Sphere, Paris, France, April 3-7, 2017

Johansen, H., J. Ferguson, P. A. Ullrich, C. Jablonowski, P. McCorquodale and C. Jablonowski (2017), **CAMR: An adaptive non-hydrostatic dynamical core for tracking atmospheric features**, oral presentation at the Workshop on Partial Differential Equations on the Sphere, Paris, France, April 3-7, 2017

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale and P. A. Ullrich (2017), **Evaluating adaptive mesh refinement in 2D and 3D idealized atmosphere experiments**, oral presentation at the Workshop on Partial Differential Equations on the Sphere, Paris, France, April 3-7, 2017

Jablonowski, C., J. Ferguson, H. Johansen, P. McCorquodale and P. Colella (2017), **Bridging Scales in Weather and Climate Models with Adaptive Mesh Refinement Techniques**, Invited seminar at the University of Toronto, Canada, March 20, 2017

Jablonowski, C., P. A. Ullrich, C. M. Zarzycki, K. A. Reed, J. Kent, P. H. Lauritzen and R. Nair (2017), **Lessons learned from the Dynamical Core Model Intercomparison Project (DCMIP-2016)**, oral presentation at the CESM Atmosphere Model Working Group (AMWG) Meeting, Boulder, CO, USA, February 27 – March 1, 2017

## 2016

Ferguson, J., C. Jablonowski, H. Johansen, E. Goodfriend, P. McCorquodale (2016), **Bridging Scales with a High-Order Adaptive Mesh Refinement Dynamical Core**, oral presentation at the 2016 American Geophysical Union (AGU) Fall Meeting, Abstract A34A-06, San Francisco, CA, USA, December 12-16, 2016

Jablonowski, C., C. M. Zarzycki, K. A. Reed, P. A. Ullrich, J. Kent, P. H. Lauritzen and R. D. Nair (2016), **The Dynamical Core Model Intercomparison Project (DCMIP-2016): Results of the Moist Baroclinic Wave Test Case**, poster presentation at the 2016 American Geophysical Union (AGU) Fall Meeting, Abstract A31A-0001, San Francisco, CA, USA, December 12-16, 2016

Reed, K. A., C. Jablonowski, C. M. Zarzycki, P. A. Ullrich, J. Kent, P. H. Lauritzen and R. D. Nair (2016), **The Dynamical Core Model Intercomparison Project (DCMIP-2016): Results of the Tropical Cyclone Test Case**, poster presentation at the 2016 American Geophysical Union (AGU) Fall Meeting, Abstract A31A-0002, San Francisco, CA, USA, December 12-16, 2016

Zarzycki, C. M., K. A. Reed, C. Jablonowski, P. A. Ullrich, J. Kent, P. H. Lauritzen and R. D. Nair (2016), **The Dynamical Core Model Intercomparison Project (DCMIP-2016): Results of the Supercell Test Case**, poster presentation at the 2016 American Geophysical Union (AGU) Fall Meeting, Abstract A31A-0003, San Francisco, CA, USA, December 12-16, 2016

Jablonowski, C., J. Ferguson, H. Johansen, P. McCorquodale, P. Colella, P. A. Ullrich, C. Zarzycki, **High-Resolution Climate Modeling via Variable-Resolution Approaches**, invited oral presentation at the PRIMAVERA Team Meeting, 2nd General Assembly, KNMI, De Bilt, Netherlands, Nov/29-Dec/1, 2016

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale and P. A. Ullrich (2016), **Bridging Scales Using High-Order Adaptive Mesh Refinement for Idealized Simulations in a Global Atmospheric**

**Model**, UM College of Engineering, poster presentation at the Engineering Graduate Symposium, Ann Arbor, November 11, 2016

Jablonowski, C. and W. Yao (2016), **In-depth Assessments of Dynamical Phenomena via an Ensemble of Idealized Dynamical Cores**, poster presentation at the Modeling Hierarchies Workshop, Princeton, NJ, November 2-4, 2016

Jablonowski, C., J. Ferguson, H. Johansen and P. Colella (2016), **Transforming Climate Modeling via Scale-Adaptive Computational Techniques**, oral presentation at the Advances in Mathematical and Computational Climate Modeling (AXICCS) Workshop, Rockville, MD, September 12-13, 2016

Jablonowski, C., P. A. Ullrich, C. M. Zarzycki, K. A. Reed, J. Kent, P. H. Lauritzen and R. Nair (2016), **The Dynamical Core Model Intercomparison Project DCMIP-2016**, oral presentation at the 21st Annual CESM Workshop, Breckenridge, CO, USA, June 20-23, 2016

Collins, W., H. Johansen, T. O'Brien, E. Goodfriend, J. N. Johnson, N. Keen, J. Ferguson and C. Jablonowski (2016), **Nonhydrostatic adaptive mesh dynamics for multiscale climate models**, poster presentation at the 21st Annual CESM Workshop, Breckenridge, CO, USA, June 20-23, 2016

Jablonowski, C. (2016), **The components of a general circulation model**, tutorial presentation at the DCMIP-2016 summer school, National Center for Atmospheric Research, Boulder, CO, June 6, 2016

Jablonowski, C. and W. Yao (2016), **Understanding the Impact of GCM Dynamical Cores on Idealized QBO-like Oscillations and Sudden Stratospheric Warmings**, invited seminar at MIT, Cambridge, MA, May 2, 2016

Jablonowski, C., J. Ferguson, H. Johansen, P. McCorquodale, P. Colella, P. A. Ullrich, C. Zarzycki and M. Taylor (2016), **High-Order Adaptive Mesh Refinement (AMR) and Variable-Resolution Techniques for Weather and Climate Models**, invited keynote presentation at the 'Workshop on Multiscale Modeling and its Applications: From Weather and Climate Models to Models of Materials Defects', Fields Institute, Toronto, Canada, April 25-29, 2016

Reed, K. A., B. Medeiros, D. Chavas and C. Jablonowski (2016), **Continued efforts in reduced complexity modeling with CAM**, oral presentation at the CESM Atmosphere Model Working Group (AMWG) Meeting, Boulder, CO, USA, February 8-10, 2016

Tonazzo, T., P. H. Lauritzen and C. Jablonowski (2016), **Dissipation of angular momentum in CAM FV**, oral presentation at the CESM Atmosphere Model Working Group (AMWG) Meeting, Boulder, CO, USA, February 8-10, 2016

Jablonowski, C. and D. R. Thatcher (2016), **Moist idealized CAM assessments with simplified physics**, oral presentation at the CESM Atmosphere Model Working Group (AMWG) Meeting, Boulder, CO, USA, February 8-10, 2016

## 2015

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale and P. A. Ullrich (2015), **Using the Chombo Adaptive Mesh Refinement Model in Shallow Water Mode to Simulate Interactions of Tropical Cyclone-like Vortices**, poster presentation at the American Geophysical Union (AGU) Fall Meeting 2015, Abstract NG23A-1769, San Francisco, CA, USA, December 14-18, 2015

Thatcher, D. R., C. M. Zarzycki and C. Jablonowski (2015), **Extratropical Transition of Tropical Cyclones in the North Atlantic: Multi-Decadal Climatology and Phase Space Analysis using a Variable-Resolution GCM**, poster presentation at the American Geophysical Union (AGU) Fall Meeting 2015, Abstract A51P-0315, San Francisco, CA, USA, December 14-18, 2015

Thatcher, D., C. M. Zarzycki and C. Jablonowski (2015), **Modeling the multi-decadal climatology of the extratropical transition of tropical cyclones in the North Atlantic**, UM College of Engineering, poster

presentation at the Engineering Graduate Symposium, Ann Arbor, Oct/30/2015

Jablonowski, C. and D. R. Thatcher (2015), **A Moist Aqua-Planet Variant of the Held-Suarez Test**, oral presentation at the Workshop on Partial Differential Equations on the Sphere, Seoul, South Korea, October 19-22, 2015

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale and P. A. Ullrich (2015), **Evaluating Adaptive Mesh Refinement in Shallow Water Simulations with the Chombo-AMR Model**, oral presentation at the Workshop on Partial Differential Equations on the Sphere, Seoul, South Korea, October 19-22, 2015

Wan, H., P. J. Rasch, M. A. Taylor and C. Jablonowski, **A Simple But Effective Method for Quantifying and Attributing Time-Stepping Errors in Climate Models**, SIAM Conference on Mathematical & Computational Issues in the Geosciences, Stanford, CA, USA, June 29 – July 2, 2015

Thatcher, D., C. Jablonowski and C. Zarzycki, **Extra-tropical transition of tropical cyclones in variable-resolution in CAM5**, Oral presentation at the 20th Annual CESM Workshop, Breckenridge, CO, USA, June 15-18, 2015

Jablonowski, C., D. Thatcher, J. Ferguson, C. Zarzycki, A. Gettelman, J. Bacmeister, J. Richter, R. Neale, C. Hannay, P. Lauritzen, P. Callaghan, V. Larson, K. Reed, P. Ullrich, M. Wehner, M. Taylor, **The Path Forward: High-Resolution Next-Generation CESM Simulations and Scale-Aware Physics**, Oral presentation at the 20th Annual CESM Workshop, Breckenridge, CO, USA, June 15-18, 2015

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale and P. Colella, **Assessing Adaptive Grid Refinement Techniques with the Chombo-AMR Model in Shallow Water Model**, Poster Presentation at the 20<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 15-18, 2015

Jablonowski, C., J. Ferguson, H. Johansen, P. McCorquodale, P. A. Ullrich, P. Colella, C. Zarzycki and M. Taylor, **High-Order Adaptive Mesh Refinement (AMR) and Variable-Resolution Techniques for Weather and Climate Models**, invited seminar at Notre Dame University, South Bend, IN, USA, April 16, 2015

Jablonowski, C., J. Ferguson, H. Johansen, P. McCorquodale, P. A. Ullrich, P. Colella, C. Zarzycki and M. Taylor, **High-Order Adaptive Mesh Refinement (AMR) and Variable-Resolution Techniques for Atmospheric General Circulation Models**, invited seminar, Oak Ridge National Laboratory, April 8, 2015

Ferguson, J., C. Jablonowski, H. Johansen, P. McCorquodale and P. Colella, **Assessing Adaptive Grid Refinement Techniques with the Chombo-AMR Model in Shallow Water Model**, Poster Presentation at the 2015 Michigan Geophysical Union (MGU) Meeting, Ann Arbor, MI, USA, April 1, 2015

Jablonowski, C., J. Ferguson, H. Johansen, P. McCorquodale, P. A. Ullrich, P. Colella, C. Zarzycki and M. Taylor, **High-Order Adaptive Mesh Refinement (AMR) and Variable-Resolution Techniques for Atmospheric General Circulation Models**, invited presentation at the Workshop on Galerkin Methods with Applications in Weather and Climate Forecasting, Edinburgh, United Kingdom, March 23-27, 2015

Jablonowski, C. and W. Yao, **Understanding the Impact of GCM Dynamical Cores and Dissipation Mechanisms on Idealized QBO-like Oscillations**, oral presentation at the QBO Modelling and Reanalyses Workshop, Victoria BC, Canada, March 16-18, 2015

## 2014

Ferguson, J., C. Jablonowski, H. Johansen, R. E. English, P. McCorquodale, P. Colella, J. Benedict, W. D. Collins, J. Johnson and P. A. Ullrich, **Assessing Grid Refinement Strategies in the Chombo Adaptive Mesh Refinement Model**, oral presentation at the American Geophysical Union (AGU) Fall Meeting 2014, Abstract A13M-06, San Francisco, CA, USA, December 15-19, 2014

Zarzycki, C. M. and C. Jablonowski, **Improving Tropical Cyclone Track and Intensity in a Global Model with Local Mesh Refinement**, oral presentation at the American Geophysical Union (AGU) Fall Meeting

2014, Abstract A13R-06, San Francisco, CA, USA, December 15-19, 2014

Kent, J., C. Jablonowski and R. B. Rood, **Diagnosing Energy and Potential Enstrophy Transfers in Dynamical Cores of GCMs**, poster presentation at the American Geophysical Union (AGU) Fall Meeting 2014, Abstract A21B-3018, San Francisco, CA, USA, December 15-19, 2014

Thatcher, D. R., C. M. Zarzycki, J. Ferguson and C. Jablonowski, **Extratropical Transition Using 23 Years of Tropical Cyclones in a Variable-Resolution Global GCM**, poster presentation at the American Geophysical Union (AGU) Fall Meeting 2014, Abstract A33L-3379, San Francisco, CA, USA, December 15-19, 2014

Bosler, P., R. Krasny and C. Jablonowski, **Adaptive Particle / Panel Methods for Global Geophysical Flow**, poster presentation at the American Geophysical Union (AGU) Fall Meeting 2014, Abstract A21A-3009, San Francisco, CA, USA, December 15-19, 2014

Zarzycki, C. M., C. Jablonowski and M. A. Taylor, **Recent application of variable-resolution CAM-SE to investigate extreme weather phenomena**, invited seminar presentation in the NCAR Climate and Global Dynamics Seminar Series, Boulder, CO, December 2014

Jablonowski, C. and D. R. Thatcher, **Physics-Dynamics Test Strategies: Bridging the Gap with Simplified Moist Test Cases**, oral presentation at the Physics-Dynamics Coupling Workshop (PDC14), Ensenada, Mexico, December 2-4, 2014

Johansen, H., E. Goodfriend, P. McCorquodale, P. Colella, W. Collins, J. Johnson, D. Rosa, J. Benedict, P. Ullrich, J. Ferguson, C. Jablonowski, **Progress towards a space-time adaptive non-hydrostatic dynamical core**, oral presentation at the Physics-Dynamics Coupling Workshop (PDC14), Ensenada, Mexico, December 2-4, 2014

Zarzycki, C. M., C. Jablonowski and M. A. Taylor, **Physics Scaling in Multi-Resolution CAM Simulations**, oral presentation at the Physics-Dynamics Coupling Workshop (PDC14), Ensenada, Mexico, December 2-4, 2014

Thatcher, D. R. and C. Jablonowski, **Intercomparison of numerical methods in climate simulations with idealized moisture parameterization**, poster presentation at the Michigan Institute for Computational Discovery and Engineering (MICDE) Fall 2014 Research Computing Symposium, Ann Arbor, MI, USA, November 6, 2014

Jablonowski, C., C. M. Zarzycki, J. O. Ferguson, M. A. Taylor, H. Johansen, W. D. Collins, R. E. English, P. McCorquodale, P. Colella and P. A. Ullrich, **Variable-resolution modeling with the Spectral Element Community Atmosphere Model (CAM-SE) and the Adaptive Mesh Refinement dynamical core AMR-Chombo**, invited talk at the joint 6th International Workshop on Global Cloud Resolving Modeling (GCRM) and 3rd International Workshop on Nonhydrostatic Numerical Models (NHM), Kobe, Japan, September, 24-26, 2014

Jablonowski, C. and C. M. Zarzycki, **Advancing the Frontiers of Tropical Cyclone Modeling with the Variable-Resolution General Circulation Model CAM-SE**, invited keynote talk at the World Weather Open Science Conference (WWOSC) 2014, Montreal, Canada, August 16-21, 2014

Colella, P., H. Johansen, E. English, P. McCorquodale, P. Ullrich, W. Collins, J. Benedict, J. Johnson, C. Jablonowski, J. Ferguson, **Development of a Multiscale Global Climate Model with Adaptive Mesh Refinement**, poster presentation at the 2014 Scientific Discovery through Advanced Computing (SciDAC-3) Principal Investigator Meeting, Washington D.C., USA, July 30 - August 1, 2014

Zarzycki, C. M., C. Jablonowski, D. Thatcher and M. Taylor, **Evaluating the impact of localized grid refinement on global climatology in CAM**, oral presentation at the 19<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 16-19, 2014

Jablonowski, C., J. Ferguson, J. Benedict, W. Collins, E. English, H. Johansen, J. Johnson, P. McCorquodale, P. Colella, P. Ullrich, **The Chombo Adaptive Mesh Refinement (AMR) Technique for Future GCM Dynamical Cores**, poster presentation at the 19<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 16-19, 2014

Benedict, J., W. D. Collins, J. N. Johnson, H. Johansen, E. English, P. McCorquodale, C. Jablonowski, J. Ferguson, **Development of a multiscale global climate model with adaptive mesh refinement**, poster presentation at the 19<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 16-19, 2014

Yao, W., C. Jablonowski, J. Richter and J. Bacmeister, **The characteristics of the QBO and SSW with different GCM dynamical cores in idealized simulations**, poster presentation at the 19<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 16-19, 2014

Thatcher, D. R. and C. Jablonowski, **Dynamical core intercomparison using a moist variant of the Held-Suarez test case on CAM5**, poster presentation at the 19<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 16-19, 2014

Zarzycki, C. M., C. Jablonowski, M. A. Taylor and M. N. Levy, **Using idealized tests to diagnose the impact of physical parameterizations on atmospheric simulations**, poster presentation at the 19<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 16-19, 2014

Jablonowski, C., C. M. Zarzycki and M. A. Taylor, **Tropical Cyclone Modeling with the DoE/NCAR Variable-Resolution General Circulation Model CAM-SE**, oral presentation at the Department of Energy (DoE) Principal Investigator Meeting, Potomac, MD, USA, May 12-14, 2014

Jablonowski, C., R. B. Rood, J. Kent, D. R. Thatcher, W. Yao, C. M. Zarzycki, J. P. Whitehead, P. H. Lauritzen, K. A. Reed, R. D. Nair, P. A. Ullrich and M. A. Taylor, **Diagnosing and Improving the Characteristics of Atmospheric Model Dynamical Cores via Idealized Test Cases**, oral presentation at the Department of Energy (DoE) Principal Investigator Meeting, Potomac, MD, USA, May 12-14, 2014

Zarzycki, C. M., C. Jablonowski, M. A. Taylor and M. N. Levy, **Using idealized tests to diagnose the impact of physical parameterizations on atmospheric simulations**, poster presentation at the Department of Energy (DoE) Principal Investigator Meeting, Potomac, MD, USA, May 12-14, 2014

Jablonowski, C. and C. M. Zarzycki, **New Frontiers: Tropical Cyclone Modeling with NCAR's Variable-Resolution General Circulation Model CAM-SE**, invited oral presentation at the European Geosciences Union (EGU) General Assembly 2014, Vienna, Austria, April 27 - May 2, 2014

Jablonowski, C. and W. Yao, **Idealized Simulations of the Quasi-Biennial Oscillation and Sudden Stratospheric Warmings with an Ensemble of Dry GCM Dynamical Cores**, oral presentation at the European Geosciences Union (EGU) General Assembly 2014, Vienna, Austria, April 27 - May 2, 2014

Jablonowski, C. and D. Thatcher, **A Moist Variant of the Held-Suarez Test for the Assessment of Atmospheric Model Dynamical Cores**, poster presentation at the European Geosciences Union (EGU) General Assembly 2014, Vienna, Austria, April 27 - May 2, 2014

Kent, J., C. Jablonowski, J. Thuburn and N. Wood, **An Energy Backscatter Model For The Shallow Water Equations On The Sphere**, poster presentation at the European Geosciences Union (EGU) General Assembly 2014, Vienna, Austria, April 27 - May 2, 2014

Bosler, P., R. Krasny and C. Jablonowski, **Lagrangian particle methods for global atmospheric flow**, oral presentation at the 2014 Partial Differential Equations on the Sphere (PDEs on the Sphere) Workshop, Boulder, CO, USA, April 7-11, 2014

Ferguson, J., C. Jablonowski, H. Johansen, E. English, P. Ulrich, P. McCorquodale and P. Colella, **Assessments of the Chombo adaptive mesh refinement model in shallow water mode**, oral presentation at the 2014 Partial Differential Equations on the Sphere (PDEs on the Sphere) Workshop, Boulder, CO, USA, April 7-11, 2014

Zarzycki, C. M. and C. Jablonowski, **The impact of localized grid refinement on sub-grid parameterization in idealized climate experiments**, poster presentation at the 2014 Partial Differential Equations on the Sphere (PDEs on the Sphere) Workshop, Boulder, CO, USA, April 7-11, 2014

Reed, K. A., B. Medeiros, P. Lauritzen, J. Bacmeister and C. Jablonowski, **Idealized tropical cyclone experiments of varying complexity: a tool for model development**, poster presentation at the 2014 Partial Differential Equations on the Sphere (PDEs on the Sphere) Workshop, Boulder, CO, USA, April 7-11, 2014

Jablonowski, C., J. Kent, P. A. Ullrich, K. A. Reed, P. H. Lauritzen, R. D. Nair and M. A. Taylor, **Updates on the Dynamical Core Model Intercomparison Project (DCMIP)**, oral presentation at the 2014 Partial Differential Equations on the Sphere (PDEs on the Sphere) Workshop, Boulder, CO, USA, April 7-11, 2014

Yao, W. and C. Jablonowski, **A Stratospheric Perspective of a GCM Dynamical Core Intercomparison**, poster presentation at the 2014 Partial Differential Equations on the Sphere (PDEs on the Sphere) Workshop, Boulder, CO, USA, April 7-11, 2014

Thatcher, D. and C. Jablonowski, **A Moist Variant of the Held Suarez Test for-Atmospheric Model Dynamical Core Intercomparisons**, poster presentation at the 2014 Partial Differential Equations on the Sphere (PDEs on the Sphere) Workshop, Boulder, CO, USA, April 7-11, 2014

Jablonowski, C., C. M. Zarzycki, J. Ferguson, M. A. Taylor, H. Johansen and P. Colella, **Pushing the Frontiers of High-Resolution Climate Modeling**, invited presentation, Applied Physics Seminar, University of Michigan, Ann Arbor, MI, USA, April 2, 2014

Zarzycki, C. M. and C. Jablonowski, **Deterministic Forecasts of Tropical Cyclones Using a Variable-Resolution Global Model**, oral presentation at the 31st Conference on Hurricanes and Tropical Meteorology, San Diego, CA, USA, March 31 – April 4, 2014

Zarzycki, C. M., C. Jablonowski and D. Thatcher, **The impacts of high-resolution refinement in variable-resolution CAM-SE on regional climate in CESM**, Atmospheric Working Group Meeting (AMWG), National Center for Atmospheric Research, Boulder, CO, USA, February 10-12, 2014

Yao, W. and C. Jablonowski, **Idealized Simulations of Sudden Stratospheric Warmings with an Ensemble of Dry GCM Dynamical Cores**, poster presentation at the SPARC General Assembly 2014, Queenstown, New Zealand, January 12-17, 2014

Jablonowski, C. and W. Yao, **Spontaneous QBO-like Oscillations in Atmospheric Model Dynamical Cores**, poster presentation at the SPARC General Assembly 2014, Queenstown, New Zealand, January 12-17, 2014

## 2013

Zarzycki, C. M. and C. Jablonowski, **Evaluating the Impact of Localized GCM Grid Refinement on Regional Tropical Cyclone Climatology and Synoptic Variability using Variable-Resolution CAM-SE**, oral presentation at the American Geophysical Union (AGU) Fall Meeting 2013, Abstract A42D-01, San Francisco, CA, USA, December 9-13, 2013

Thatcher, D., C. Jablonowski and C. Zarzycki (2013), **A Moist Idealized Test Case for Atmospheric General Circulation Models**, poster presentation at the American Geophysical Union (AGU) Fall Meeting 2013, Abstract A33B-0202, San Francisco, CA, USA, December 9-13, 2013

Reed, K. A., C. Jablonowski, P. A. Ullrich, J. Kent, P. H. Lauritzen, M. A. Taylor and R. Nair, **Multi-model GCM ensemble simulations of idealized tropical cyclones**, poster presentation at the American Geophysical Union (AGU) Fall Meeting 2013, Abstract A33B-0219, San Francisco, CA, USA, December 9-13, 2013

Yao, W. and C. Jablonowski, **Idealized Simulations of Sudden Stratospheric Warmings with an Ensemble of Dry GCM Dynamical Cores**, poster presentation at the American Geophysical Union (AGU)

Fall Meeting 2013, Abstract SA23A-2048, San Francisco, CA, USA, December 9-13, 2013

Jablonowski, C., C. Zarzycki, M. A. Taylor, H. Johansen and Phillip Colella, **Pushing the frontiers of high-resolution climate modeling**, invited Keynote talk at the University of Michigan CyberInfrastructure (CI) Days, Ann Arbor, MI, USA, Nov 13-14, 2013

Yao, W. and C. Jablonowski, **The influence of moisture and gravity wave drag in idealized simulations of Quasi-Biennial Oscillation**, poster presentation, UM College of Engineering Graduate Symposium (EGS), Ann Arbor, MI, USA, Nov. 15, 2013

Thatcher, D. and C. Jablonowski, **Comparison of a moist idealized test case and aquaplanet simulations in an atmospheric general circulation model**, poster presentation, UM College of Engineering Graduate Symposium (EGS), Ann Arbor, MI, USA, Nov. 15, 2013

Jablonowski, C., **A Seamless World: Challenges and Opportunities**, invited talk at the High-Performance Computational Science with Structured Meshes and Particles (HPCS-SMP) Workshop on Simulation and Modeling in Climate, Berkeley, CA, USA, Oct. 14-16, 2013

Yao, W. and C. Jablonowski, **The characteristics of the QBO and SSW with different GCM dynamical cores in idealized simulations**, oral presentation at the 19th AMS Conference on Atmospheric and Oceanic Fluid Dynamics and the 17th AMS Conference on the Middle Atmosphere, Newport, RI, USA, June 16-21, 2013

Kent, J., J. P. Whitehead, C. Jablonowski and R. B. Rood, **Methods to Determine the Effective Resolution of Dynamical Cores**, oral presentation at the 2013 SIAM Conference on Mathematical & Computational Issues in the Geosciences, Padova, Italy, June 17-20, 2013

Jablonowski, C., K. A. Reed and C. M. Zarzycki, **Uncertainty in tropical cyclone simulations in multi-model GCM ensembles**, invited oral presentation at the 4th International Summit on Hurricanes and Climate Change, Kos, Greece, June 13-18, 2013

Zarzycki, C. M. and C. Jablonowski, **High-resolution tropical cyclone climate simulations in NCAR's variable-resolution general circulation model CAM-SE**, poster presentation at the 4th International Summit on Hurricanes and Climate Change, Kos, Greece, June 13-18, 2013

Jablonowski, C., C. M. Zarzycki and M. A. Taylor, **New Frontiers: Tropical Cyclone Modeling with NCAR's Variable-Resolution General Circulation Model CAM-SE**, ZMAW(Zentrum für Marine und Atmosphärische Wissenschaften)/KlimaCampus Seminar, Hamburg, Germany, June 11, 2013

Zarzycki, C. M. and C. Jablonowski, **High-resolution, multi-decadal tropical cyclone simulations using a variable-resolution general circulation model**, oral presentation at the U.S. CLIVAR Hurricane Workshop, Geophysical Fluid Dynamics Laboratory, Princeton, NJ, USA, June 5-7, 2013

Jablonowski, C., **Uncertainty in Weather and Climate Models: A Dynamical Core Perspective**, invited oral presentation at the Workshop on Stochastic Modelling and Computing for Weather and Climate Prediction, Oriel College, Oxford, U.K., March 18-21, 2013

Zarzycki, C. M. and C. Jablonowski, **Utilizing Grid Refinement in the Cubed-sphere Spectral Element Option of CAM to Model Tropical Cyclones**, oral presentation at the minisymposium 'Cubed-Sphere Grids for Planet Earth and Beyond' at the 2013 SIAM Conference on Computational Science and Engineering, Boston, MA, USA, February 25- March 1, 2013

Jablonowski, C., P. A. Ullrich, J. Kent, K. A. Reed, M. A. Taylor, P. H. Lauritzen and R. D. Nair, **Status of the Dynamical Core Model Intercomparison Project (DCMIP)**, invited oral presentation at the 2nd IS-ENES Workshop on HPC for Climate Models, Toulouse, France, January 30 – February 1, 2013

Zarzycki, C. M., C. Jablonowski and M. A. Taylor, **Assessing the Ability of Variable-Resolution Global Models to Forecast Tropical Cyclones**, oral presentation at the Special Symposium on Advancing Weather

and Climate Forecasts: Innovative Techniques and Applications, 93rd Annual American Meteorological Society Meeting, Austin, TX, USA, January 6-10, 2013

## 2012

Zarzycki, C. M., C. Jablonowski and M. A. Taylor, **Using the Variable-Resolution General Circulation Model CAM-SE to Simulate Regional Tropical Cyclone Climatology**, oral presentation at the AGU Fall Meeting 2012, abstract A31L-05, San Francisco, CA, USA, December 3-7, 2012

Yao, W. and C. Jablonowski, **The influence of Convection and Gravity Wave Drag Parameterizations in Idealized Simulations of the Quasi-Biennial Oscillation With Different GCM Dynamical Cores**, oral presentation at the AGU Fall Meeting 2012, abstract A13Q-08, San Francisco, CA, USA, December 3-7, 2012

Kent, J., C. Jablonowski, J. Whitehead and R. B. Rood, **Methods to Determine the Effective Resolution of Dynamical Cores of GCMs**, oral presentation at the AGU Fall Meeting 2012, abstract A52B-01, San Francisco, CA, USA, December 3-7, 2012

Ullrich, P. A., C. Jablonowski, J. Kent, K. A. Reed, M. A. Taylor, P. H. Lauritzen and R. D. Nair. **Towards a Unified Test Case Suite for Global Atmospheric Models**, poster presentation at the AGU Fall Meeting 2012, abstract A53C-0159, San Francisco, CA, USA, December 3-7, 2012

Jablonowski, C., P. A. Ullrich, J. Kent, K. A. Reed, M. A. Taylor, P. H. Lauritzen and R. D. Nair, **The 2012 Dynamical Core Model Intercomparison Project (DCMIP)**, poster presentation at the AGU Fall Meeting 2012, abstract A53C-0160, San Francisco, CA, USA, December 3-7, 2012

Murphy S., C. DeLuca, L. Cinquini, I. Overeem, P. N. Edwards, C. Jablonowski, R. B. Rood and V. Balaji, **The Earth System CoG Collaboration Environment: Connecting Resources in the Earth Sciences**, poster presentation at the AGU Fall Meeting 2012, abstract IN51A-1683, San Francisco, CA, USA, December 3-7, 2012

Zarzycki, C. M. and C. Jablonowski, **Improving weather prediction and regional climate modeling through the use of variable-resolution global atmospheric models**, poster presentation at the UM 2012 CoE Graduate Engineering Symposium, Ann Arbor, MI, USA, November 2, 2012

Zarzycki, C. M., C. Jablonowski and M. A. Taylor, **Evaluating Variable-Resolution CAM-SE with High-Resolution Forecast Simulations**, Workshop on Weather and Climate Prediction on Next Generation Supercomputers: Numerical and Computational Aspects, U.K. Met Office, Exeter, U.K., October 22-25, 2012

Whitehead, J., C. Jablonowski, J. Kent and R. B. Rood, **Potential Vorticity: A Diagnostic Tool for General Circulation Models**, oral presentation at the Workshop on the Solution of Partial Differential Equations on the Sphere, Cambridge, U.K., September 24-28, 2012

Bosler, P. A., C. Jablonowski and R. Krasny, **Particle Methods for Geophysical Flow on the Sphere**, oral presentation at the Workshop on the Solution of Partial Differential Equations on the Sphere, Cambridge, U.K., September 24-28, 2012

Kent, J., C. Jablonowski and P. A. Ullrich, **DCMIP 2012: Tracer Transport Tests in Dynamical Cores**, oral presentation at the Workshop on the Solution of Partial Differential Equations on the Sphere, Cambridge, U.K., September 24-28, 2012

Zarzycki, C. M., C. Jablonowski and M. A. Taylor, **Improving Tropical Cyclone Representation in General Circulation Models through the use of Variable Resolution**, oral presentation at the Workshop on the Solution of Partial Differential Equations on the Sphere, Cambridge, U.K., September 24-28, 2012

Jablonowski, C., P. A. Ullrich, J. Kent, K. A. Reed, M. A. Taylor, P. H. Lauritzen and R. D. Nair, **Highlights of the Dynamical Core Model Intercomparison Project (DCMIP)**, oral presentation at the Workshop on the Solution of Partial Differential Equations on the Sphere, Cambridge, U.K., September 24-28, 2012



Jablonowski, C., **Model Evaluations I: How to think about and what to expect from dynamical core and GCM tests**, Tutorial presentation at the Dynamical Core Model Intercomparison Project (DCMIP) Summer School on Future-Generation Non-Hydrostatic Weather and Climate Models, National Center for Atmospheric Research, Boulder, CO. USA, July 30 - August 10, 2012

Jablonowski, C., **Model tuning II: Review of possible filtering operations and diffusive mechanisms in dynamical cores**, Tutorial presentation at the Dynamical Core Model Intercomparison Project (DCMIP) Summer School on Future-Generation Non-Hydrostatic Weather and Climate Models, National Center for Atmospheric Research, Boulder, CO. USA, July 30 - August 10, 2012

Bosler, P. A., R. Krasny and C. Jablonowski, **Particle Methods for Geophysical Flow on the Sphere**, poster presentation at the 2012 SIAM Annual Meeting, Minneapolis, MN, USA, July 9-13, 2012

Zarzycki, C. M., C. Jablonowski, M. A. Taylor and M. N. Levy, **Tropical Cyclone Modeling Using CAM-SE's Variable Resolution Option**, poster presentation at the 17<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 18-21, 2012

Reed, K. A., M. F. Wehner, C. Jablonowski and F. Li, **Tropical cyclone climatology in High Resolution CAM**, oral presentation at the 17<sup>th</sup> Annual CESM Workshop, Breckenridge, CO, USA, June 18-21, 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**, poster presentation at the 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**, oral presentation at the 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., C. Jablonowski and M. F. Wehner, **Tropical Cyclone Structure in the High-Resolution Community Atmosphere Model**, oral presentation at the 1<sup>st</sup> U.S. CLIVAR Hurricane Working Group Workshop, New Orleans, LA, USA, January 27-28, 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 24th 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, Abstract A41G-07, 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, Abstract GC11B-0921, 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, Abstract A32D-05, 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, Abstract A51A-0216, 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, Abstract PP13B-1835, 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, Abstract A51A-0225, 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

Bosler, P. A., R. Krasny and C. Jablonowski, **A Lagrangian Particle Method for Scalar Transport on the Sphere**, oral presentation at the Workshop on Transport Schemes on the Sphere, National Center for Atmospheric Research (NCAR), Boulder, CO, USA, March 30-31, 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, Abstract A23A-0214, 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, Abstract A41G-07, 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, Abstract A41G-06, 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, 2008), Poster Presentation, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract A33A-0214, San Francisco, CA, USA, December 15-19, 2008

Reed, K. and C. Jablonowski, **Idealized Tropical Cyclones in Atmospheric General Circulation Models** (Dec. 17, 2008), Poster Presentation, Eos Trans. AGU, 89(53), Fall Meet. Suppl., Abstract A33A-0215, 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, 2008), 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, February 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 methodes 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 methodes 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> (2010-2013)
- 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*, *Journal of Geophysical Research (Atmospheres)*, *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*, *Tellus*, *Computers and Mathematics with Applications*, *Earth and Space Science*
- Reviewer for NSF and DoE proposals
- Member of DoE review panels, DoE ASCR proposals, DoE ALCC proposals

### National and International Service

- Member of the AMS Committee on Artificial Intelligence Applications to Environmental Science (January 2019 – current)
- University of Michigan Representative to the University Corporation for Atmospheric Research (UCAR) (May 2018 - current)
- Co-Chair of the National Oceanic and Atmospheric Administration (NOAA) Next Generation Global Prediction System (NGGPS) Strategic Implementation Plan (SIP) Working Group on Dynamics and Nesting (February 2017 - current)
- Co-Chair of the CESM Atmosphere Model Working Group (AMWG), responsible for the future direction of the Community Atmosphere Model (CAM) which is the atmospheric component of NCAR's Community Earth System Model (CESM) (11/2014 - current)
- Member of the Climate Change Science Institute Science Advisory Board at the Department of Energy's (DoE) Oak Ridge National Laboratory (2014-current)
- Member of the advisory committee for the Computer Science and Mathematics Division at Oak Ridge National Laboratory (2015)
- Member of the External Expert Advisory Board (EEAB) for the European PRIMAVERA project (PRocess-based climate sIMulation: AdVances in high-resolution modelling and European climate Risk Assessment), <https://www.primavera-h2020.eu/>, 2015 - 2020 led by Dr. Malcolm Roberts, U.K. Met Office, and Dr. Pier-Luigi Vidale, University of Reading, U.K.
- Executive Board Committee Member, Earth System Modeling Framework (ESMF), 2010 - 2017
- 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), 2009 – 2012
- 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

### University of Michigan Service

- Member of UM's Advanced Research Computing Advisory Team (ARCAT), ARCAT is the steering committee of UM's Advanced Research Computing – Technology Services (ARC-TS), Sep. 2017 – Aug. 2019
- Member of the CLASP Faculty Hiring Committee for Dr. Ashley Payne (2017-2018)
- Chair of the Strategic Planning committee, UM Department of Climate and Space Sciences and Engineering (2016-2017)
- Member of the Michigan Institute for Computational Discovery and Engineering (MICDE) Management Committee (Sep. 2016 – current)
- Member of the College of Engineering (CoE) IT Faculty Council, (9/2015 – 8/2017, 9/2018 - current)
- Member of the CoE Scholastic Standing Committee (Fall 2014 - 2017)
- Member of CLASP's Curriculum Committee (Sep. 2013 – current)
- Member of the Steering Committee of the Michigan Institute for Computational Discovery and Engineering (2013-2016)
- Faculty representative for Applied Physics at the Science Cafe during the Conference for Undergraduate Women in Physics (CUWiP), sponsored by the American Physical Society (APS), Ann Arbor, Jan/17/2015
- Member of UM's Rackham Predoctoral Fellowship Committee (2014 & 2015)
- AOSS Executive Committee (9/2012 – 8/2014)
- AOSS Outreach Committee, March 2012 – 2013
- AOSS Earth System Science and Engineering (ESSE) Undergraduate Advisor for Climate Science, 2006 – 2015
- 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)
- Member of the AOSS Qualifying Exam Committee, Winter 2009, 2012, 2013, 2015
- 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:

- Co-organizer and convener of the session 'Recent Developments in Numerical Earth System Modelling' at the EGU 2019 Meeting in Vienna, Austria, in collaboration with Christopher Eldred, Werner Bauer, Christiane Jablonowski, Christian Kühnlein, April/7-12/2019
- Co-Convener of the session 'Machine Learning Techniques for Atmospheric and Oceanic Prediction Models' at the 18th AMS Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences, Phoenix, AZ, January, 6-10, 2019, in collaboration with Amy McGovern (University of Oklahoma)
- Organizer of the workshop 'Emerging Data Science and Machine Learning Opportunities in the Atmospheric Sciences' at the AGU 2018 Fall Meeting in Washington, D.C., December 10-14, 2018
- Co-organizer of the workshop 'Physics-Dynamics coupling in geophysical models', at the European Centre for Medium-Range Weather Forecasts (ECMWF), Reading, U.K., July/10-12/2018, in collaboration with S. Malardel (ECMWF), H. Wan (PNNL), M. Gross (CICESE, Centro de Investigación Científica y de

Educación Superior de Ensenada) and N. Wood (U.K. Met Office)

- Co-organizer and convener of the session ‘Recent Developments in Numerical Earth System Modelling’ at the EGU 2018 Meeting in Vienna, Austria, in collaboration with Christopher Eldred, Werner Bauer, Christiane Jablonowski, Christian Kühnlein, April/8-13/2018
- Co-organizer and convener of the session ‘Recent developments in numerical atmospheric, oceanic and sea-ice models: towards global cloud and eddy resolving simulations on exascale supercomputers’ at the EGU 2017 Meeting in Vienna, Austria, in collaboration with Peter Düben, Christopher Eldred, Florian LeMarie, Xavier Lapillonne, Valentine Anantharaj, Werner Bauer, Sergey Danilov, Laurent Debreu, Rieke Heinze, Mehmet Ilicak, Christiane Jablonowski, Christian Kühnlein, Thierry Penduff, Pier-Luigi Vidale, April/24-28/2017
- Co-organizer and convener of the session ‘Advances in Numerical Methods for Geophysical Modeling’ at the AGU 2016 Fall Meeting in San Francisco, CA, in collaboration with David Hall (University of Colorado) and Peter Lauritzen (NCAR), December/12-16/2016
- Co-organizer of the workshop ‘Physics-Dynamics coupling in geophysical models’, at the Pacific Northwest National Laboratory (PNNL), Richmond, WA, September, 20-22 2016, in collaboration with H. Wan and P. Rasch (PNNL), M. Gross (CICESE, Centro de Investigación Científica y de Educación Superior de Ensenada), N. Wood (U.K. Met Office) and S. Malardel (ECMWF)
- Co-organizer, fundraiser and lecturer: Dynamical Core Model Intercomparison Project (DCMIP-2016) and 2-week summer school, NCAR, Boulder, CO, 6/6-17/2016
- Co-organizer of the workshop ‘Physics-Dynamics coupling in geophysical models – Bridging the gap’, in Ensenada, Baja California, Mexico, December 2-4, 2014, in collaboration with M. Gross (CICESE, Centro de Investigación Científica y de Educación Superior de Ensenada), N. Wood (U.K. Met Office) and S. Malardel (ECMWF)
- Co-organizer and convener of the session ‘Numerical methods of the atmosphere and ocean (including composition and boundary layer at all latitudes)’ at the World Weather Open Science Conference (WWOSC) 2014 in Montreal, Canada, in collaboration with Dr. Jean Côté, August 16-21, 2014
- Co-organizer and convener of the session ‘Recent developments in numerical Earth System Modelling’ at the European Geosciences Union (EGU) General Assembly 2014 in Vienna, Austria, in collaboration with James Kent, Colin Zarzycki, Eigil Kaas, Brian Sorensen, Peter H. Lauritzen, April 27 – May 2, 2014
- Lead-organizer, fundraiser, lecturer: 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
- 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)
- Co-Organizer and session chair 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)
- 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
- Discussion leader at the Workshop *Multi-scale Modelling of the Atmosphere and Ocean*, University of Reading and Isaac Newton Institute for Mathematical Sciences, 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 Peter H. Lauritzen (NCAR), December/15-19/2008
- Co-organizer, fundraiser, lecturer: 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 Jadwiga Richter (NCAR) and Karen Shell (Oregon State University), December/11-15/2006

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## **PROFESSIONAL SOCIETIES AND NETWORKS**

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- Member of the American Geophysical Union (AGU)
- American Meteorological Society (AMS)
- Earth Science Women’s Network (ESWN)