# YIFENG CUI

SAN DIEGO SUPERCOMPUTER CENTER
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## APPOINTMENTS

**Director, High Performance GeoComputing Laboratory,** *San Diego Supercomputer Center, 2010 - present*

**Adjunct Professor***, San Diego State University, July, 2009 - present*

**Senior Computational Scientist,** *San Diego Supercomputer Center, 2001-present*

**Postdoctoral Researcher,** *Scripps Institution of Oceanography, 2000-2001*

**Staff Climatologist/Senior Scientific Programmer,** *Atmospheric Environmental Branch, Environment Canada, Vancouver*, *1997-2000*

**Research Assistant,** *Institute of Hydrology, University of Freiburg, Germany, 1993-1996*

**Research Engineer,** *Nanjing Research Institute of Hydrology and Water Resources, Nanjing, China, 1987-1991*

**Assistant Engineer,** *Kunming Hydroelectric Design and Research Institute, Kunming, 1982-1984*

## EDUCATION

**Ph.D. in Hydrology,** *University of Freiburg, Germany, 1997*

**M.Sc. in Water Resources and Hydroclimatology**, *Hohai University, China, 1987*

**B.Sc. in Meteorology***, Nanjing Institute of Meteorology, China, 1982*

## AWARDS & HONORS

**Director of Intel Parallel Computing Center,** *Oct, 2015*

**NVIDIA Global Impact Award,** *March, 2015*

**IDC HPC Innovation Excellence Award,** *June, 2013*

**TeraGrid Best Visualization Display Award,** *TeraGrid'11, July 24, 2011*

**SciDAC OASCR Visualization Award,** *May 2011*

**ACM Gordon Bell Finalist,** *Supercomputing'10, New Orleans, Nov 13-19, 2010*

**SciDAC OASCR Visualization Award***, May 2009*

**Excellence Award** *for Scaling AWM-OLSEN to 40k BG/L processors, SDSC, 2006*

**Excellence Award** *for Parallelization of Regional Spectral Model RSM, SDSC, 2003*

**First Place of Science and Technology Progress Award** *from Ministry of Water Resources of China for joint project Hydrologic Cycles on Climate, 2001*

**Postdoctoral Fellowship**, *Scripps Institution of Oceanography, 2000-2001*

**State Baden-Wuerttemberg Graduate Scholarship**, *Germany, 1994-1996*

## SELECTED TALKS AND LECTURES

UCSD SE 290 Seminar, *Feb 8, 2016*

International Workshop on Co-design 2015, *Wuxi, Nov 6-8, 2015 (invited)*

GTC'15, San Jose, March 16-20, 2015 *(invited)*

ICTP Symposium on HPC and Data-Intensive Applications in Earth Sciences, Trieste, Nov 13-14, 2014 *(invited)*

International Workshop on Co-design 2014, *Guangzhou, Nov 6-8, 2014 (invited)*

MURPA Seminar, *UQeensland, Oct 16, 2014 (invited)*

US-China-Germany E-Science and Cyberinfrastructure (CHANGES) 2014 Workshop, *Beijing, Sept 10-12, 2014 (invited)*

OLCF Users Meeting, *Oak Ridge, July 22-24, 2014 (invited)*

Simula Research Lab, *Oslo, July 8, 2014 (invited)*

IHPCES'14/ICCS'14, *Cairns, June 9-12, 2014*

IGCC HPC Comparison Workshop, *San Diego, April 29-30, 2014 (invited)*

HPC User Forum Meeting, *Santa Fe, April 7-9, 2014 (invited)*

Int'l SPNS-2013 Workshop, *Tokyo, Dec 5-6, 2013 (Plenary)*

University of Tokyo ASE Workshop, *Tokyo, Dec 4, 2013 (invited)*

NVIDIA GPU Technology Theater @ SC13, *Nov 20, 2013 (invited)*

Technical Paper, *SC13, Denver, Nov 18, 2013*

NVIDIA GPU Computing Symposium, *San Diego, Nov 5-6, 2013 (invited)*

CS&E Colloquium Seminar, *UCRiveside, Nov 4, 2013 (invited)*

Schlumberger HPC Workshop, *Houston, Oct 1, 2013 (invited)*

XSEDE and Blue Waters Extreme Scaling Workshop, *Boulder, Aug 15-16, 2013*

Int'l Workshop of GPU and MIC Solutions to Multiscale Problems in Science and Engineering, *Changchun, July 29-Aug 2, 2013 (invited)*

ICCS/IHPCES, *Barcelona, June 5-7, 2013 (Chair)*

Int'l Conference on 3-D Wave Propagation and Imaging Through the Earth's Interior, *June 18-21, Wuhan, 2013 (invited)*

Lecture on High Performance Computing, *San Diego State*, *April, 2013*

GTC 2013*, San Jose, Mar 18-21, 2013*

ONERA/DSNA, *France, Nov 19, 2012 (invited)*

HPC China Workshop at SC'12, *Nov 13, 2012 (invited)*

International Workshop on Co-design, *Beijing, Oct 23-25, 2012 (Plenary)*

SSA'12, *San Diego, Apr 17, 2012 (invited)*

US-China Software Workshop, *San Diego, March 05, 2012 (invited)*

SIAM PP'12, *Savannah, Feb 15-17, 2012 (invited)*

International Workshop on Co-design, *Beijing, Oct 25-26, 2011 (Keynote)*

7th Int'l APEC Cooperation for Earthquake Simulation (APES) Workshop, *Otaru, Oct 3-8, 2010 (Plenary)*

Int'l Conference of Numerical Analysis and Applied Mathematics (ICNAAM'10), *Rhodes, September 19-25, 2010 (invited)*

IEEE Int'l Joint Conference on Computational Sciences and Optimization, *Huangshan, May 2010 (Keynote)*

IBM HPC Scientific Computing User Group Annual Meeting (SciComP), *San Francisco, May 2010 (invited)*

Int'l Symposium on Grid Computing, *Taipei, Mar 2010 (Plenary)*

Int'l Symposium for "Integrated Predictive Simulation System for Earthquake and Tsunami Disaster", *Tokyo, Japan, 2008 (Keynote)*

Western Pacific Geophysics Meeting, *AGU Cairns, Australia, July 2008 (Plenary)*

NSF Blue Gene Applications Workshop, Cyberinstrastructure Channel, *April 2007 (invited)*

Second Geoscience Application Requirements for Petascale Architectures (GARPA-2) Workshop, *San Diego, February 2007 (invited)*

UCSD Physics 244: Parallel Computing Course for Graduate Students, *2007*

Summer Institute Lectures, *San Diego Supercomputer Center, 2001 - 2010*

## PROFESSIONAL ACTIVITIES

*Affiliations*

Member, Institute of Electrical & Electronics Engineers (IEEE)

Member, Association for Computing Machinery (ACM)

Member, Society for Industrial and Applied Mathematics (SIAM)

Member, International Association of Hydrological Sciences (IAHS)

Member, American Geophysical Union (AGU)

Member, Seismological Society of America (SSA)

*Service on National or Steering Committees*

Chair, Computational Science Committee, Southern California Earthquake Center, 2012-2016

Planning Committee of Southern California Earthquake Center, 2012-2016

IDC Technical Computing Advisory Panel, 2014-date

High Performance Computing Advisory Panel, Golden Energy Computing, 2013-date

Technical Program Committee, XSEDE 2011-date

TACC Petascale User Committee, 2006-2013

Parallel Tools Consortium Steering Committee, 2002-2004

Liaison of Parallel Tools and Environment with National Partnership for Advanced Computational Infrastructure (NPACI), 2002-2003

*Service on International Conference Committees*

Co-Chair, Int'l Workshop on Advances in High Performance Computational Applications and Frameworks (IHPCES), 2011-2013, 2016

Chair, Int'l Conference on Networking and Distributed Computing (ICNDC), 2016

Int'l Conference on Computational Sciences (ICCS), 2007, 2012-date

Int'l Meeting on High Performance Computing for Computational Science (VECPAR), 2016

Co-Chair, VECPAR Scientific Committee, 2014

International Conference on Parallel Processing (ICPP), 2015

SIAM Conference on Computational Science & Engineering (CSE), 2015

Conference on Network and Parallel Computing (NPC), 2015

Technical Program Committee, SC'13/SC'14

Int'l Workshop of GPU Solutions to Multiscale Problems in Science and Engineering, 2011

Int'l Workshop on HPC and Grid Applications (IWHGA'10), 2010

Int'l Conference on Computational Sciences and Optimization (CSO), 2010/2011

Science Session Chair, TeraGrid'08 Best Paper Review Committee, 2008

*Review for Journals*

Journal of Parallel and Distributed Computing

Journal of HPC Application

Journal of Supercomputing

Concurrency and Computation

Geophysics

Acta Geotechnica, Springer

Lecture Notes in Computer Science Series, Springer

eBook Synthesis Lectures, Morgan & Claypool Publishers

*Review for Grant and Allocation Proposals*

US National Science Foundation (NSF) Panels

Southern California Earthquake Center

Switzerland National Petascale Initiatives and Co-Design Proposals

King Abdullah University of Science and Technology

XSEDE XRAC Large Allocation Proposals

## SELECTED RESEARCH GRANTS AND ALLOCATIONS

*Selected Current Grants*

PI, Intel Parallel Computing Center, *Accurate and Efficient Earthquake Simulations on Intel Xeon Phi,* $140,000, 10/2015 - 9/2016

NVIDIA Global Impact Award, $150,000, 5/2015 -

Co-PI, NSF SI2-SSI*: Community Software for Extreme-scale Computing in Earthquake System Science (Phase II)*, PI: T. Jordan (USC), $475,000, 06/2015 - 5/2018

Co-PI, NSF SI2-SSI: *A Sustainable Community Software Framework*, PI: T. Jordan (USC), $420,000 ($2.5 M total), 08/2012 - 07/2016

SDSC-PI, W.M. Keck Foundation, *Collaboratory for Interseismic Simulation andcModeling (CISM),* PI: T. Jordan (USC), $150,000, 07/2015-06/2018

Co-PI, NSF Geoinformatics: *Community Computational Platforms for Developing Three-Dimensional Models of Earth Structure,* $140,000, PI: T. Jordan (USC), 5/2014 - 4/2016

PI, NSF PRAC *PAID IME Collaboration on Blue Waters,* $75,000, 10/2015-9/2017

SDSC-PI, NSF FESD Type 1: *Fault Earthquake System Dynamics,* PI: J. Dieterich (UCR), $500,000 ($4.6 M total), 8/2011 - 8/2017

Co-PI, NSF *Blue Waters Petascale Resource Allocation: Extending the Spatiotemporal Scales of Physics-based Seismic Hazard Analysis*, PI: T.H. Jordan (USC), $40,000 Travel award (total), 07/2014 - 06/2016

Co-PI, The Research Council of Norway R&D: *User-friendly Programming of GPU-enhanced Clusters via Automated Code Translation and Optimization,* PI: X. Cai (SRL, Norway), $40K Travel award, 07/2012 - 06/2016

*Selected Past Grants*

Co-PI, NSF SI2-SSI: *A Sustainable Community Software Framework*, PI: T. Jordan (USC), $420,000 ($2.5 M total), 05/2012 - 04/2015

Co-PI, NSF SHF: *Large: Collaborative Research: Unified Runtime for Supporting Hybrid Programming Models on Heterogeneous Architecture*, PI: DK Panda (OSU), $118,498 ($1.8 M total), 05/2012 - 04/2015

Co-PI, NSF Geoinformatics: Community Computational Platforms for Developing Three-Dimensional Models of Earth Structure, $290,000 ($1.8 M total), PI: T. Jordan, (USC), 07/2012 - 06/2014

PI, SCEC Core: *Accelerating CyberShake SGT Calculations on Heterogeneous Supercomputers,* $35,000, 02/2012 - 12/2013

PI, NSF/NCSA: *Phase 1 Enhanced Intellectual Services- Direct PRAC Support- Press-On Blue Waters*, $75,000, 05/2012 - 09/2013

SDSC-PI, NSF Geoinformatics: *A Petascale Cyberfacility for Physics-Based Seismic Hazard Analysis (PetaSHA-3),* PI: T. Jordan (USC), $250,000 ($1.6 M total), 6/2010 - 12/2012

NSF PetaApps-2: *Outward on the Spiral: Petascale Inference in Earthquake System Science (PetaShake-2),* 8/2007 - 07/2011

NSF PetaApps-1: *Collaborative Research: Enabling Earthquake System Science Through Petascale Calculations (PetaShake),* 10/2007 - 09/2009

NSF PRAC: *Petascale Research in Earthquake System Science on Blue Waters (PressOnBlueWaters),* 10/2009 - 9/2011

NSF Geoinformatics: *Petascale Cyberfacility for Physics-based Seismic Hazard Analysis (PetaSHA-2),* 5/2008 - 4/2010

*High Performance Computing Allocations*

PI, NSF XSEDE Resource Allocation (XRAC): *Earthquake and Fault System Dynamics Research,* 27.8 M Core-hours, 10/2013-9/2016

Co-PI, NSF XSEDE Resource Allocation (XRAC): *PetaSHA: An Earthquake System Science Approach to Physics-based Seismic Hazard Research*, 133 M Core-hours in total, 2008-2013

Co-PI, NSF Blue Waters Petascale Resource Allocation (PRAC): *Extending the Spatiotemporal Scales of Physics-based Seismic Hazard Analysis,* 12.66 M Blue Waters Node-hours, 7/2004-6/2016

Co-PI, DOE INCITE*: Physics-based Probabilistic Seismic Hazard Analysis / Deterministic Simulation of Large Regional Earthquakes at frequencies Up to 4 Hz,* 223 M Processor-Hours on ORNL Jaguar/Titan and ANL Mira/Intrepid, 2009-2013; 433 M Processor-Hours on Titan/Mira, 2015-2016

Co-PI, NCAR University ASD: *Community Computational Platforms for Developing 3D Models of Earth Structure*, 8.5 M Core-Hours on NCAR Yellowstone, 08/2012-11/2012

Co-PI, Early Science Program: *Using Multi-scale Dynamic Rupture Models to Improve Ground Motion Estimates,* Department of Energy, 150 M ANL Next Generation Blue Gene core-hours, 2011-2013

PI, NSF XRAC Medium Resource Allocation: *Parallelization of a Finite Element Code for Petascale Dynamic Modeling,* 110 K core-hours, 2010-2011

PI, DOE INCITE: *Blue Gene Watson Consortium Days,* 2006 and 2007

## COLLABORATORS & OTHER AFFILIATIONS

*Collaborators*

Scott Baden (UCSD), Michael Barall (Invisible), Bill Barth (UT), Greg Beroza (Stanford), Jacobo Bielak (CMU), Xing Cai (SRL, Norway), Scott Callaghan (USC), Po Chen (Wyoming), Zizhong Chen (UCR), Dongju Choi (SDSC), Amit Chourasia (SDSC), Stuart Clark (SRL), Elizabeth Cochran (USGS), Steve Day (SDSU), Mattias Christen (ULugano), Ewa Deelman (USC), Unat Didem (UCSD), James Dieterich (UCR), Eric Dunham (Stanford), Donat Faeh (ETH), Eric Fielding (NASA), Jacqui Gilchrist (UCSC), Clark Guest (UCSD), Alexander Heinecke (Intel), Wen-Mei Hwu

(UIUC), Thomas H. Jordan (USC), Gideon Juve (USC), Jeff Larkin (NVIDIA), Masha Liukis (USC), Amit Majumdar (SDSC), Philip Maechling (USC), Kevin Milner (USC), David Oglesby (UCR), Kim Olsen (SDSU), Dhabaleswar K. (DK) Panda (Ohio State), Dmitry Pekurovsky (SDSC), Efecan Poyraz (Google), Keith Richards-Dinger (UCR), Daniel Roten (SDSU), William Sarvan (SDSU), Tim Scheitlin (NCAR), Olaf Schenk (ULugano), Karl Schulz (Intel), Zheqiang Shi (SDSU), Liwen Shih (UHouston), Bruce Shaw (Columbia), John Shaw (Harvard), Jonathan Stewart (UCLA), Ricardo Taborda (UMemphis), Mahidhar Tatineni (SDSC), Karen Tomko (Ohio State), Jeroen Tromp (Princeton), Terry Tullis (Brown), Karan Vahi (USC), Ray E. Wells (USGS), Kyle Withers (SDSU), Heming Xu (Fico), Farzin Zareian (UCI), Jun Zhou (Baidu)

*Thesis Advisor and Postgraduate Scholar Sponsor (Last five years):*

Harsha Basavaraj (2016, M.S.), Alexander Breuer (Postdoc, 2015-), Kunyao Chen (2014-2015, M.S.), Aravind Kimar K (2016, M.S.), Shashank Kaushik (2014-2015, M.S), Brajesh Kushwaha (2014, M.S.), Kwangyoon Lee (2009-2011, Ph.D.), Dawei Mu (postdoc, 2016-), Siyuan Mu (2014, M.S.), Hieu Nyugen (2009-2011, Ph.D.), Efecan Poyraz (2012-2014, Ph.D.), Sridhar S (2014, M.S.), Shiyu Song (2011-2012, Ph.D.), Josh Tonin (2016, Ph.D.), Gautam Wilkins (2016, Ph.D.), Jiyang Yu (2014-, Ph.D.), Boyan Zhang (2013-2014, M.S.), Jun Zhou (Thesis Advisor, 2012-2014, Ph.D),

## RECENT PUBLICATIONS AND ABSTRACTS

*Book or Book Chapters*

1. Cui, Y., Chourasia, A., Moore, R., Olsen, K., Maechling, P., Jordan, T., The TeraShake Computational Platform for Large-scale Earthquake Simulations, Advances in Geocomputing, Lecture Notes in Earth Sciences 119, DOI 10.1007/978-3-540-85879-9_7, 229-278, editor H. Xing, Springer-Verlag Berlin Heidelberg, 2009.
2. Maechling, P., Deelman, E., Zhao, L., Graves, R., Mehta, G., Gupta, R., Mehringer, J., Kesselman, C., Callaghan, S., Okaya, D., Francoeur, H., Gupta, V., Cui, Y., Vahi, K., Jordan, T. and Field, E. "SCEC CyberShake Workflows—Automating Probabilistic Seismic Hazard Analysis Calculations", in *Workflows for e-Science*, Ian Taylor et al. eds, 144-163, Springer, 2007
3. Kanamitsu, M., Kanamaru, H., Cui, Y., Juang, H., Parallel Implementation of Regional Spectral Atmospheric Model, *Public Interest Energy Research Program (PIER) Project*, California Energy Commission, 1-17, CEC-500-2005-014, Feb, 2005.
4. Cui, Y., Different Approaches towards an Understanding of Runoff Generation. *Freiburger Schriften zur Hydrologie,* Band 7 (ISSN 0945-1609), pp. 163, 1998.

*Journal Papers*

1. Roten, D., Olsen, K.B., Day, S.M., Cui, Y. and Fäh, D., Expected seismic shaking in Los Angeles reduced by San Andreas fault zone plasticity, *Geophysical Research Letters*, 41, No. 8, 2769-2777, doi:10.1002/2014GL059411, April, 2014.

2. Xu, H., Cui, Y., Dieterich, J., Richards-Dinger, K., Poyraz, E. and Choi, D., Aftershock sequence simulations using synthetic earthquakes and rate-state seismicity formulation, *Earthquake Science, Special Issue,* 27(4), 401-410, Springer. DOI 10.1007/s11589-014-0087-7.
3. Unat, D., Zhou, J., Cui, Y., Cai, X. and Baden, S.: Accelerating an Earthquake Simulation with a C-to-CUDA Translator, *Journal of Computing in Science and Engineering*, Vol. 14, No. 3, 48-58, May/June, CiSESI-2011-09-0094, May, 2012.
4. Olsen, K. B., Dalguer, L., Day, S., Cui, Y., Zhu, J., Cruz, V.M., Roten, D., Mayhew, J., Maechling, P., Jordan, T., Chourasia, A. and Okaya, D. ShakeOut-D: Ground Motion Estimates Using an Ensemble of Large Earthquakes on the Southern San Andreas Fault With Spontaneous Rupture Propagation, *Geophysical Research Letters*, 36, L04303, 1-6, doi:10.1029/ 2008GL036832, 2009.
5. Bielak, J., Graves, R., Olsen, K., Taborda, R., Ramirez-Guzman, L., Day, S., Ely, G., Roten, D., Jordan, T., Maechling, P., Urbanic, J., Cui, Y. and Juve, G.: The ShakeOut Earthquake Scenario: Verification of Three Simulation Sets. *Geophysical Journal International*, Vol. 80, 375-404, 10.1111/j.1365-246X.2009. 04417.x, October, 2009.
6. Cui, Y., Moore, R., Olsen, K., Chourasia, A., Maechling, P., Minster, B., Day, S., Hu, Y., Zhu J., Jordan, T., Towards Petascale Earthquake Simulations*, Acta Geotechnica*, 4 (2), 79-93, DOI 10.1007/S11440-008-0055-2, Springer, 2008.
7. Olsen, K. B., S. M. Day, J. B. Minster, Y. Cui, A. Chourasia,, D. Okaya, P. Maechling, and T. Jordan. TeraShake2: Spontaneous Rupture Simulations of Mw7.7 Earthquakes on the Southern San Andreas Fault *Bull Seis. Soc. Am.*, 98 (3), 1162-1185, June, 2008.
8. Cui, Y., Moore, R., Olsen, K., Chourasia, A., Maechling, P., Minster, B., Day, S., Hu, Y., Zhu J., Majumdar, A., Jordan, T., Enabling Very-Large Scale Earthquake Simulations on Parallel Machines*,* Advancing Science and Society through Computation"*, International Conference on Computational Science* 2007, PART I, Lecture Notes in Computer Science Series 4487*,* 46-53, Springer, 2007.
9. Chourasia. A. Cutchin, S. M., Olsen. K.B., Minster. B., Day. S., Cui. Y., Maechling. P., Moore. R., Jordan. T., Insights gained through visualization for large earthquake simulations, Discovering the Unexpected, *Computer Graphics and Application Journal*, Vol. 27, No. 6, 28-34, September/October, 2007.
10. Faerman, M, Moore, R., Cui, Y., Hu, Y., Zhu, J., Minister, B., and Maechling, P., Large Scale Data for Earthquake Simulations, *Journal of Grid Computing,* 1-12, DOI 10.1007/s10723-007-9072-x, Springer-Verlag, 2007.
11. Olsen, K., Day, S.M., Minster, J.B., Cui, Y., Chourasia, A., Faerman, M., Moore, R., Maechling, P. and Jordan, T., Strong Shaking in Los Angeles Expected From Southern San Andreas Earthquake, *Geophysical Research Letters*, 33(7), 1-4, 2006.

*Conferences Proceedings*

1. Roten, D., K. B. Olsen, Y. Cui, and S. M. Day, Quantification of fault zone plasticity effects with spontaneous rupture simulations, *Workshop on Best Practice*

*in Physics-Based Fault Rupture Models for Seismic Hazard Assessment of Nuclear Installations*, Vienna, Austria, Nov 18-20, 2015.

2. Poyraz, E., Xu, H. and Cui, Y., Application-specific I/O Optimizations on Petascale Supercomputers, *Proceedings of International Conference on Computational Science*, Vol 29, 910-923, Elsevier, Cairns, June 10-12, 2014.
3. Cui, Y., Poyraz, E., Olsen, K., Zhou, J., Withers, K., Callaghan, S., Larkin, J., Guest, C., Choi, D., Chourasia, A., Shi, Z., Day, S., Maechling, P. and Jordan, T., Physics-based Seismic Hazard Analysis on Petascale Heterogeneous Supercomputers, Technical Paper, *SC13,* Denver, Nov 17-22, 2013 (in press)
4. Chourasia, A., Cui, Y., Poyraz, E., Olsen, K., Zhou, J., Withers, K., Callaghan, S., Larkin, J., Guest, C., Choi, D., A., Shi, Z., Day, S., Maechling, P. and Jordan, Visualization Of Deterministic High-Frequency Ground Motions From Simulations Of Dynamic Rupture Along Rough Faults With And Without Medium Heterogeneity Using Petascale Heterogeneous Supercomputers, *SC'2013 Visualization Showcase*, Denver, Nov 17-22, 2013.
5. Scheitlin, T., Domingo, P., Olsen, K., Sarvan, W., Cui, Y., Poyraz, E., Maechling, P. and Jordan, T., Simulated Wave Propagation for the Mw5.4 Chino Hills, CA, Earthquake, Including a Statistical Model of Small- Scale Heterogeneities, *SC2013 Visualization Showcase,* Denver, Nov 17-22, 2013.
6. Callaghan, S., Maechling, P., Vahi, K., Juve, G., Deelman, E., Cui, Y., Poyraz, E., Jordan, T., Running A Seismic Workflow Application on Distributed Resources, Poster, *SC13,* Denver, Nov 17-22, 2013
7. Cui, Y., Poyraz, E., Zhou, J., Callaghan, S., Maechling, P., Jordan, T., Shih, L. and Chen, P., Accelerating CyberShake Calculations on XE6/XK7 Platforms of Blue Waters, *Proceeding of Extreme Scaling Workshop 2013*, August 15-16, Boulder, 2013, IEEE Xplore Digital Library.
8. Xu, H., Y. Cui, DJ Choi, E. Poyraz, K. Ricards-Dinger, J.H. Dieterich, Large-scale Earthquake Rupture Simulations Using a Hybrid Method, *XSEDE'13,* Poster, San Diego, July 22-25, 2013.
9. Zhou, J., Y. Cui, E. Poyraz, D. Choi, and C. Guest, Multi-GPU implementation of a 3D finite difference time domain earthquake code on heterogeneous supercomputers, *Proceedings of International Conference on Computational Science*, Vol. 18, 1255-1264, Elsevier, ICCS 2013, Barcelona, June 5-7, 2013.
10. Cui, Y., Petascale simulations of strong motion and tomographic seismology using AWP-ODC, **I**nt'l Conference on 3-D Wave Propagation and Imaging Through the Earth's Interior, June 18-21, Wuhan, 2013.
11. Christen, M., O. Schenk, and Y. Cui, PATUS for Convenient High-Performance Stencils: Evaluation in Earthquake Simulations, Technical Paper, *SC12*, Salt Lake City, Nov 10-16, 2012.
12. Chourasia, A., Zhou, J., Cui, Y., Choi, DJ, Olsen, K.: Role of visualization in porting a seismic simulation from CPU to GPU architecture (Visualization Showcase), *XSEDE'12,* Chicago, July 16-20, 2012.
13. Zhou, J., Choi, DJ, Cui, Y.: GPU acceleration of a 3D finite difference earthquake code on XSEDE Keeneland, *XSEDE'12*, Chicago, July 16-20, 2012.
14. Zhou, J., Didem, U., Choi, D., Guest, C. & Y. Cui, Hands-on Performance

Tuning of 3D Finite Difference Earthquake Simulation on GPU Fermi Chipset, *Proceedings of International Conference on Computational Science*, Vol. 9, 976-985, Elesvier, ICCS 2012, Omaha, Nebraska, June, 2012.

15. Cui, Y., Olsen, K., Jordan, T., Lee, K., Zhou, J., Small, P., Ely, G., Roten, D., Panda, DK, Chourasia, A., Levesque, J., Day, S. and Maechling, P., Scalable Earthquake Simulation on Petascale Supercomputers, Gordon Bell Finalist, *Supercomputing*'10, 1-20, New Orleans, Nov, 2010.
16. Cui, Y., Looking forward to Architecture Changes with Seismic Wave Propagation Using a 3D Finite Difference Code, *Int'l Conference of Numerical Analysis and Applied Mathematics*, pp. 1781, edited by T. E. Simos, G. Psihoyios, and Ch. Tsitouras, Rhodes, Greece, 19-25 September 2010.
17. Zhou, J., Cui, Y., Davis, S., Guest, C., Maechling, P., Workflow-Based High Performance Data Transfer and Ingestion to Support Petascale Simulations, *IEEE Comput. Sciences and Optimization (CSO'10),* vol. 1, 343-347, May 2010.
18. Potluri, S., Lai, P., Tomko, K., Cui, Y., Tatineni, M., Barth, W., Majumdar, A. and Panda, DK: , "Quantifying performance benefits of overlap using MPI-2 in a seismic modeling application", *Proceedings of the 24th ACM Int'l Conference on Supercomputing*, 17-25, doi: 10.1145/1810085.1810092, 2010.
19. Ely, G.P., Jordan, T.H., Maechling, P., Olsen, K.B., Day, S.M., Minster, J.-B., Graves, R.W., Bielak, J., Taborda , R., Beroza , G., Ma, S., Cui , Y., Urbanic , J., and Callaghan , S., The Big Ten Earthquake Scenarios for Southern California, *SRL*, 81(2), pp. 311, 2010.
20. Lee, K., Cui, Y., Maechling, P., Olsen, K. and Jordan, T., Communication Optimizations of SCEC CME AWP-Olsen Application for Petascale Computing (Best Poster Finalist), Supercomputing 09, Portland, 2009.
21. Lee, K., Cui, Y., Kaiser, T., Maechling, P., Olsen, K. and Jordan, T., IO Optimizations of SCEC CME AWP-Olsen Application for Petascale Earthquake Computing (Best Poster Finalist), Supercomputing 09, Portland, 2009.
22. Maechling, P., Deelman, E., Cui, Y., Implementing Software Acceptance Tests as Scientific Workflows, *International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'09*), Las Vegas, July 13-16, 2009.
23. Maechling, P., Muench, H., Francoeur, H., Okaya, D., Cui, Y.: SCEC Earthworks Science Gateway: Interactive Configuration and Automated Execution of Earthquake Simulations on the TeraGrid. *BroadeningParticipation in TeraGrid, TeraGrid'07 Conference,* Madison, June 4-8, 2007.
24. Muench, J., Maechling, P., Francoeur, H., Okaya, D., Cui, Y., 2006: SCEC/CME Earthworks Science Gateway: Widening SCEC Community Access to the TeraGrid. *Advancing Scientific Discovery, TeraGrid'06 Conference,* Indianapolis, June, 2006.
25. Cui, B., Moore, R., Olsen, K., Chourasia, A., Y. Hu, J. Zhu, Minster, B., Maechling, P., Enabling a Large-scale Application on the TeraGrid, *Advancing Scientific Discovery, TeraGrid'06 Conference,* Indianapolis, June, 2006.
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*the High Performance Computing & Simulation Conference,* 83-89, ISBN 3-936150-35-4 (book), June 13-16, Magdeburg, Germany, 2004.

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## PERSONAL INFORMATION

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