2022 IEEE/ACM Sixth International Workshop on Software Correctness for HPC Applications (Correctness 2022)

Dallas, Texas, USA 13-18 November 2022



IEEE Catalog Number: CFP22S72-POD **ISBN:**

978-1-6654-6336-2

Copyright © 2022 by the Institute of Electrical and Electronics Engineers, Inc. All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

*** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.

IEEE Catalog Number:	CFP22S72-POD
ISBN (Print-On-Demand):	978-1-6654-6336-2
ISBN (Online):	978-1-6654-6335-5
ISSN:	2831-3917

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400 Fax: (845) 758-2633 E-mail: curran@proceedings.com Web: www.proceedings.com



2022 IEEE/ACM Sixth International Workshop on Software Correctness for HPC Applications (Correctness) **Correctness 2022**

Table of Contents

Message from the Workshop Chairs	. v
Workshop Organization	vi

Numerical Correctness

Proposed Consistent Exception Handling for the BLAS and LAPACK
James Demmel (University of California, Berkeley, USA), Jack Dongarra
(University of Tennessee, USA), Mark Gates (University of Tennessee,
USA), Grég Henry (Intel Corporation, USA), Julien Langou (University
of Colorado, Denver, USA), Xiaoye Li (Lawrence Berkeley National
Ľaboratory, USA), Piotr Luszczek (University of Tennessee, USA),
Weslley Pereira (University of Colorado, Denver, USA), Jason Riedy
(Lucata Corporation, USA), and Cindy Rubio-González (University of
California, Davis, USA)
Towards Verified Rounding Error Analysis for Stationary Iterative Methods
Ariel Kellison (Cornell University, USA), Mohit Tekriwal (University
of Michigan, USA), Jean-Baptiste Jeannin (University of Michigan,
USA), and Geoffrey Hulette (Sandia National Laboratories, USA)

MPI Correctness

Static Local Concurrency Errors Detection in MPI-RMA Programs Emmanuelle Saillard (Inria, France), Marc Sergent (Atos, France), Célia Tassadit Ait Kaci (Inria, France), and Denis Barthou (Bordeaux Institute of Technology, University of Bordeaux, LaBRI, Inria, France)	18
On-the-Fly Data Race Detection for MPI RMA Programs with MUST	27
Simon Schwitanski (Chair for High Performance Computing, IT Center,	
RWTH Aachen University, Germany), Joachim Jenke (Chair for High	
Performance Computing, IT Center, RWTH Aachen University, Germany),	
Felix Tomski (Chair for High Performance Computing, IT Center, RWTH	
Aachen University, Germany), Christian Terboven (Chair for High	
Performance Computing, IT Center, RWTH Aachen University, Germany),	
and Matthias S. Müller (Chair for High Performance Computing, IT	
Center, RWTH Aachen University, Germany)	

Multithreaded Correctness

MiniKokkos: A Calculus of Portable Parallelism Feiyang Jin (Georgia Institude of Technology, USA), John Jacobson III (University of Utah, USA), Samuel D. Pollard (Sandia National Laboratories, USA), and Vivek Sarkar (Georgia Institute of Technology, USA)	37
 Early Experience with Transformer-Based Similarity Analysis for DataRaceBench Winson Chen (University of California Santa Cruz, USA; University of California Santa Cruz, USA), Tristan Vanderbruggen (Lawrence Livermore National Laboratory, USA), Pei-Hung Lin (Lawrence Livermore National Laboratory, USA), Chunhua Liao (Lawrence Livermore National Laboratory, USA), and Murali Emani (Argonne National Laboratory, USA) 	45
Leveraging the Dynamic Program Structure Tree to Detect Data Races in OpenMP Programs Lechen Yu (Georgia Institute of Technology, USA), Feiyang Jin (Georgia Institute of Technology, USA), Joachim Protze (RWTH Aachen University, Germany), and Vivek Sarkar (Georgia Institute of Technology, USA)	54

or Index
