2018 IEEE/ACM International Workshop on Performance, Portability and Productivity in HPC (P3HPC 2018)

Dallas, Texas, USA 16 November 2018



IEEE Catalog Number: CI ISBN: 97

CFP18S71-POD 978-1-7281-0221-4

Copyright © 2018 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: CFP18S71-POD ISBN (Print-On-Demand): 978-1-7281-0221-4 ISBN (Online): 978-1-7281-0220-7

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



2018 IEEE/ACM International Workshop on Performance, Portability and Productivity in HPC (P3HPC) P3HPC 2018

Table of Contents

Session 1

Cha	h-Performance Molecular Dynamics Simulation for Biological and Materials Sciences: Allenges of Performance Portability .1
	Empirical Roofline Methodology for Quantitatively Assessing Performance Portability .1.4
	Stephen Lien Harrell (Purdue University), Joy Kitson (University of Delaware), Robert Bird (Los Alamos National Labratory), Simon John Pennycook (Intel Corporation), Jason Sewall (Intel Corporation), Douglas Jacobsen (Intel Corporation), David Neill Asanza (Grinnell College), Abaigail Hsu (Stonybrook University), Hector Carrillo (University of New Mexico), Hessoo Kim (Brown University), and Robert Robey (Los Alamos National Labratory)
Pro	Aluating the Impact of Proposed OpenMP 5.0 Features on Performance, Portability and ductivity .37

Session 2

Performance Portability Challenges for Fortran Applications .47		
Delivering Performance-Portable Stencil Computations on CPUs and GPUs Using Bricks .59		
Heterogeneous CPU-GPU Execution of Stencil Applications .7.1		
Author Index 81		