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# High Performance Computing and Applications

Second International Conference, HPCA 2009  
Shanghai, China, August 10-12, 2009  
Revised Selected Papers



Springer

## Volume Editors

Wu Zhang

Wei Qin Tong

Shanghai University, School of Computer Engineering and Science

Shanghai 200072, P.R. China

E-mail: wzhang@shu.edu.cn, wqtong@mail.shu.edu.cn

Zhangxin Chen

University of Calgary, Schulich School of Engineering

Calgary AB T2N 1N4, Canada

E-mail: zhachen@ucalgary.ca

Craig C. Douglas

University of Wyoming, Department of Mathematics

1000 University Avenue, Laramie, WY 82071-3036, USA

E-mail: cdougl6@uwoyo.edu

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## Preface

The Second International Conference on High-Performance Computing and Applications (HPCA 2009) was a follow-up event of the successful HPCA 2004. It was held in Shanghai, a beautiful, active, and modern city in China, August 10–12, 2009. It served as a forum to present current work by researchers and software developers from around the world as well as to highlight activities in the high-performance computing area. It aimed to bring together research scientists, application pioneers, and software developers to discuss problems and solutions and to identify new issues in this area. This conference emphasized the development and study of novel approaches for high-performance computing, the design and analysis of high-performance numerical algorithms, and their scientific, engineering, and industrial applications. It offered the conference participants a great opportunity to exchange the latest research results, heighten international collaboration, and discuss future research ideas in HPCA.

In addition to 24 invited presentations, the conference received over 300 contributed submissions from over ten countries and regions worldwide, about 70 of which were accepted for presentation at HPCA 2009. The conference proceedings contain some of the invited presentations and contributed submissions, and cover such research areas of interest as numerical algorithms and solutions, high-performance and grid computing, novel approaches to high-performance computing, massive data storage and processing, hardware acceleration, and their wide applications.

The conference was co-organized by the School of Computer Engineering and Science and High-Performance Computing Center, Shanghai University and co-sponsored by Shanghai Jiao Tong University, Xi'an Jiao Tong University, and the University of Calgary. The conference organizers would like to thank Springer for their willingness to publish the conference proceedings as a volume in the series of *Lecture Notes in Computer Sciences*.

December 2009

Wu Zhang  
Zhangxin Chen  
Craig C. Douglas  
Weiqin Tong

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