

Preface

Special Issue for the 8th ACFD

Computational Fluid Dynamics (CFD) has fast established as an important tool for advanced scientific and engineering research and development. To expand our knowledge of newly-developed computational techniques and to exchange results from using CFD, the Asian Computational Fluid Dynamics Conference (ACFD) was inaugurated in Hong Kong in 1995. After rotating to different countries, the 8th ACFD returned to Hong Kong and held in the scenic campus of the Hong Kong University of Science and Technology (HKUST) during January 10-14, 2010. The 8th ACFD had a very successful program, with 139 technical papers and about 200 participants that covered almost the complete spectrum of fluid dynamics.

This special edition documents 10 of the selected papers presented at the 8th ACFD, including:

Xiaogang Deng, Meiliang Mao, Guohua Tu, Hanxin Zhang and Yifeng Zhang
High-order and high accurate CFD methods and their applications for complex grid problems

Yuqi Wu and Xiao-Chuan Cai
A parallel domain decomposition algorithm for simulating blood flow with incompressible Navier-Stokes equations with resistive boundary condition

Wei Kang, Jia-Zhong Zhang and Pei-Hua Feng
Aerodynamic analysis of a localized flexible airfoil at low Reynolds numbers

Lihao Zhao and Helge I. Andersson
Statistics of particle suspensions in turbulent channel flow

Shizhao Wang, Xing Zhang and Guowei He
Numerical simulation of a three-dimensional fish-like body swimming with finlets

V. V. Aristov, A. A. Frolova and S. A. Zabelok
Supersonic flows with nontraditional transport described by kinetic methods

Tony W. H. Sheu and C. H. Yu
Numerical simulation of free surface by an area-preserving level set method

M. Somasekhar, S. Vivek, Keshav. S. Malagi, V. Ramesh and S. M. Deshpande
Adaptive Cloud Refinement (ACR) – adaptation in meshless framework

B. Ray, G. Biswas and A. Sharma
Oblique drop impact on deep and shallow liquid

C. T. Hsu, S. W. Chiang and K. F. Sin
A novel dynamic quadrature scheme for solving Boltzmann equation with discrete ordinate and lattice Boltzmann methods

These papers covered a wide variety of flows, ranging from low to high Reynolds number flows, from low speed to supersonic flows, from single- to multi-phase flows and from deformable boundary to free surface, as well as various numerical techniques, including parallel computing algorithm, high accurate methods and dynamic quadrature scheme for solving Boltzmann equation. It is hoped that this special issue will timely provide the results to advance our knowledge in CFD and to culture the future collaboration among those who had participated in the 8th ACFD.

Finally, we express our sincere thanks to the authors, the reviewers, the editors and the publisher, who have worked together seamlessly to make the publication of this special issue possible.

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