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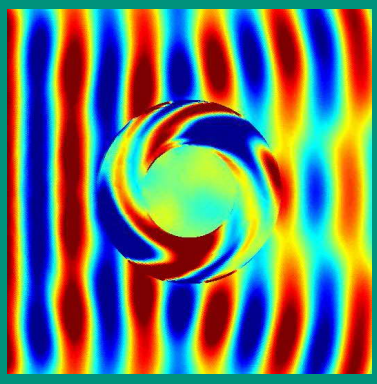
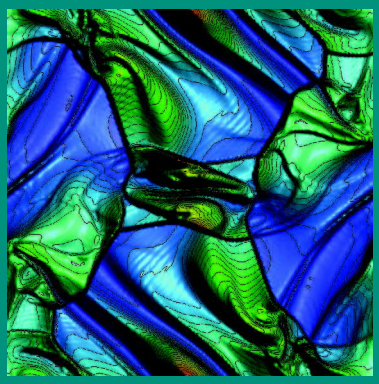
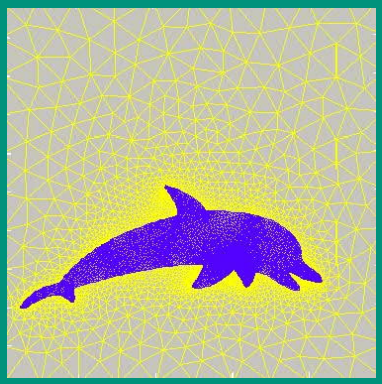

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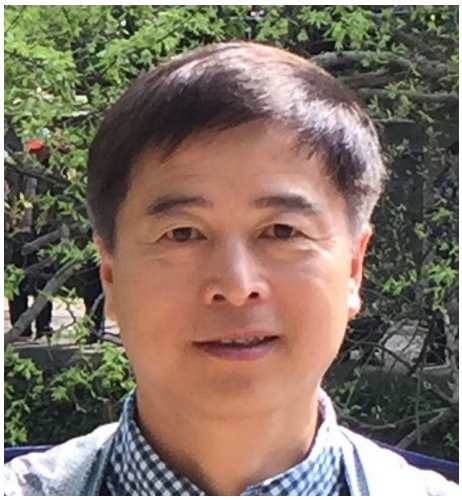
Preface

Special Issue Dedicated to Professor Jie Shen's 60th Birthday



We are delighted to present this special issue in honor of Professor Jie Shen on the occasion of his sixtieth birthday in *Communications in Computational Physics* (CiCP) of which he is a founding member of the editorial board. This issue collects original papers by distinguished invited speakers at the *International Conference on Advanced Numerical Methods for Scientific Computation* which was held at Southern University of Science and Technology in Shenzhen, China, June 15-17, 2019, together with several invited contributions from his close collaborators. The topics of the papers span diverse research areas in computational and applied mathematics, which perfectly characterize Jie Shen's significant contributions in many areas of computational and applied mathematics, including theoretical numerical analysis, scientific computing, computational fluid dynamics, and computational materials science. More precisely, he has made outstanding contributions in algorithms and analysis of spectral methods, projection type methods for incompressible flows, algorithms and simulations for phase-field models, and most recently structure preserving schemes for gradient flows.

Professor Jie Shen received his B.S. degree from Peking University, China (1982) and his Ph.D. degree from Université de Paris-Sud, France (1987). He started his academic career as a Postdoc/Visiting Assistant Professor in the Department of Mathematics, Indiana University (1987-1991), followed by ten years in the Department of Mathematics at Penn State University (1991-2001), rising through the ranks of Assistant Professor, Associate

Professor and Full Professor. After one year in the Department of Mathematics at University of Central Florida (2001-2002), he joined Purdue University in 2002 and currently serves as the Director of Center for Computational and Applied Mathematics at Purdue University. Professor Jie Shen's impactful contributions to numerical analysis and scientific computing have been acknowledged internationally. He received a Fulbright Research Chair Award in 2008, a Changjiang Chair Professorship by Chinese Ministry of Education in 2009, and was elected Fellow of the American Mathematical Society in 2017.

Professor Jie Shen has been a teacher, a mentor, a collaborator, and a very dear friend to many of us. His dedication, passion and intuition in research have had tremendous influences on his students, postdocs, visiting scholars, and many other junior researchers. Indeed, many of us may resonate the personal messages from Professor David Nicholls (UIC, also see his contributed paper in this issue): *"Jie was neither my Ph.D. advisor nor my post-doctoral supervisor, yet he has been a mentor and a guide to me during my career. It is a testament to his generosity that he has helped someone so wholly unconnected to himself. For me he has always been an oracle for queries and a sounding board for ideas whose opinion I hold in high esteem."*

We would like to thank all the authors and referees for their contributions to make this possible. Last but not the least, we are grateful for the strong support of the managing editors and editorial office of CiCP.

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