QIN SHENG

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I. Research Interests

Numerical analysis, scientific computations

II. Education

02/1990, Ph.D. in Mathematics, University of Cambridge, UK (*advisor: Professor Arieh Iserles*)
12/1984, M.S. in Mathematics, Nanjing University, China
12/1982, B.S. in Mathematics, Nanjing University, China

III. Academic Positions Held

2005-Present, Professor, Baylor University, USA
2001-2005, Associate Professor, University of Dayton, USA
1996-2001, Assistant/Associate Professor, University of Louisiana in Lafayette, USA
1990-1995, Assistant Professor, National University of Singapore, Singapore
1989-1990, Research Associate, University College London, UK (*supervisor: Professor Frank T. Smith, FRS*)

IV. Major Editorial/Service Positions

1. Editor-in-Chief (since 2010), *International Journal of Computer Mathematics,* Taylor & Francis
2. Guest Editors of several Special Research Issues for Taylor & Francis, Elsevier and Dynamic Publisher
3. Reviewer for the *Math Review* (since 2003), American Mathematical Society
4. Panelist (since 2014), National Science Foundation, USA

V. Selected Recent Peer-Reviewed Publications in Print (total publications over 110)

1. Q. Sheng (with T. N. Jones, L. P. Gonzalez and S. Guha), A continuing exploration of a decomposed compact method for highly oscillatory wave problems, *J. Comp. Appl. Math*., **299** (2016), 207-220
2. Q. Sheng (with G. Cleaver, K. Kirsten and A. Wang and T. Zhu), High-order primordial perturbations with quantum gravitational effects, *Phys. Review D*, **90** (2016), 123525-
3. Q. Sheng (with H. Sun), Stability of a modified Peaceman-Rachford method for the paraxial Helmholtz equation on adaptive grids, *J. Comp. Phys*., **325** (2016), 259-271
4. Q. Sheng (with J. Padgett), Solving the degenerate Kawarada equation via an adaptive LOD method over nonuniform spatial grids, *J. Math. Anal. Appl.*, **439** (2016), 465-480
5. Q. Sheng (with J. Padgett), Nonuniform Crank-Nicolson schemes for solving the stochastic Kawarada equation via arbitrary grids, *Numer. Meth. PDEs.*, **33** (2017), 1305-1328
6. Q. Sheng (with J. Henderson and C. C. Tisdell), Constructive existence results for solutions to systems of boundary value problems via general Lyapunov methods, *Diff. Eqns & Appl*., **9** (2017), 57-68
7. Q. Sheng (with J. Padgett), Numerical solution of degenerate stochastic Kawarada equations via a semi-discretized approach, *Appl. Math. Comp.,* **325** (2018), 210-226
8. Q. Sheng (with H. Sun and Y. Xu), On variational properties of balanced central fractional derivatives, *Intern J. Comp. Math*., **95** (2018), 39-67
9. Q. Sheng (with G. Cleaver, K. Kirsten and A. Wang and T. Zhu), Primordial non-Gaussianity and power asymmetry with quantum gravitational effects in loop quantum cosmology, *Physical Review D*, **97** (2018), 043501-1-11
10. Q. Sheng (with T. N. Jones), Numerical stabilities study of a decomposed compact method for highly oscillatory Helmholtz equations, *J. Comput. Appl. Math*., to appear, 2018
11. Q. Sheng (with J. E. Macias-Diaz and S. Tomasiello), Discrete dynamics of fractional systems: theory and numerical techniques, *Discrete Dyn. Nature & Society*, **1** (2018), doi:10.1155/2018/1079748

VI. Recent Keynote Presentations

1. Chasing, identifying and removing the numerical instability from fast computations of highly oscillatory waves, *CMMSE'17*, Cadiz, Spain, July 4-8, 2017
2. High performance and high frequency splitting method applications, *International Conference on Computational Finance*, Lisbon, Portugal, September 4-8, 2017
3. On the expectation of splitting methods for solving partial differential equations, *ENOAN 2018*, Aguascalientes, Mexico, August 27-31, 2018