

FRONTIERS IN NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATIONS: CELEBRATING THE 70TH BIRTHDAY OF CHI-WANG SHU

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ABSTRACT

Over the past four decades, Chi-Wang Shu has profoundly shaped the field of computational mathematics through pioneering contributions to high-order numerical methods, hyperbolic conservation laws, discontinuous Galerkin methods, strong stability preserving time discretizations, and scientific computing. In celebration of his 70th birthday, this minisymposium brings together distinguished researchers whose work reflects the breadth and continuing impact of his scientific legacy. The presentations highlight recent advances in numerical methods for partial differential equations, including wave propagation, multiscale computation, adaptive algorithms for hyperbolic conservation laws, high-order time integration, and the mathematical analysis of numerical stability and accuracy. Together, these talks showcase both the enduring influence of Professor Shu's ideas and the exciting new directions they continue to inspire across computational mathematics.

SPEAKERS

1. Gunilla Kreiss, Uppsala University
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Different flavors of cut DG methods for wave propagation.
2. Bjorn Engquist, UT Austin
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Heterogeneous Multiscale Methods then and now.

3. Alina Chertok, NCSU
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New Adaptive Numerical Methods Based on Dual Formulation of Hyperbolic Conservation Laws.
4. Eitan Tadmor, UMCP
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Runge-Kutta methods are stable for arbitrarily large systems of ODEs
5. Adi Ditkowski, TAU
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Low-Mode Near-Jordan Instability and Order Reduction in Second-Order Time Discretizations for Wave-Type Problems.
6. Remi Abgrall, Universität Zürich
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Recent advances in Active flux schemes for hyperbolic systems of conservation laws.
7. Jie Shen, Eastern Institute of Technology, Ningbo.
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Title: Efficient and accurate spectral methods for PDEs in complex domains
8. Sigal Gottlieb, UMass Dartmouth,
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Title: Two derivative Runge-Kutta Methods