Curriculum Vitae

Qi Tao（陶琪）

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Education

- **Postdoc**, 07/2020 – Present
  Applied and Computational Mathematics Division,
  Beijing Computational Science Research Center, Beijing 100193, P.R. China
  Advisors: Professor Zhimin Zhang

- **Ph.D. in Mathematics**, 09/2015 – 06/2020
  School of Mathematical Sciences,
  University of Science and Technology of China, Hefei, Anhui 230026, P.R. China
  Advisors: Professor Chi-Wang Shu & Professor Yan Xu

- **B.S. in Mathematics**, 09/2011 – 07/2015
  School of Mathematics and Statistics, Northwest Normal Universtiy,
  Lanzhou, Gansu 130024, P.R. China

Professional Experience

- **Visiting Student**, 09/2018 – 05/2020
  Division of Applied Mathematics, Brown University, Providence, RI 02912, USA
  Advisor: Professor Chi-Wang Shu

Research Interests

- Discontinuous Galerin (DG) finite element methods

- Post-processing of DG methods

- Superconvergence of DG methods

Publications/Preprints

- Journal Publications

  1. **Qi Tao** and Yinhua Xia, *Error estimates and post-processing of local discontinuous Galerkin method for Schrödinger equations*, Journal of Computational and Applied Mathematics, v356 (2019), pp.198-218.

  2. **Qi Tao** and Yan Xu, *Superconvergence of arbitrary Lagrangian-Eulerian discontinuous Galerkin methods for linear hyperbolic equations*, SIAM Journal on Numerical Analysis, v57 (2019), pp.2142-2165.

  3. Yong Liu, **Qi Tao** and Chi-Wang Shu, *Analysis of optimal superconvergence of an ultraweak-local discontinuous Galerkin method for time dependent fourth-order equation*, ESAIM: Mathematical Modelling and Numerical Analysis (M^2AN), v54 (2020), pp.1797-1820.

  4. **Qi Tao**, Yan Xu and Chi-Wang Shu, *An ultraweak-local discontinuous Galerkin method for PDEs with high order spatial derivatives*, Mathematics of Computation, v89 (2020), pp.2753-2783.

  5. **Qi Tao**, Yan Xu and Chi-Wang Shu, *A discontinuous Galerkin method and its error estimate for nonlinear fourth-order wave equations*, Journal of Computational and Applied Mathematics, v386 (2021), 113230.

  6. **Qi Tao**, Waixiang Cao and Zhimin Zhang, *Superconvergence analysis of the ultra-weak local discontinuous Galerkin method for one dimensional linear fifth order equations*, Journal of Scientific Computing, v88 (2021), 63.

  7. **Qi Tao**, Yan Xu and Xiaozhou Li, *Negative norm estimate of arbitrary Lagrangian-Eulerian discontinuous Galerkin methods for nonlinear hyperbolic equations*, Communications on Applied Mathematics and Computation, 2021, DOI: https://doi.org/10.1007/s42967-020-00108-z, hard version to appear.

- Preprints

  1. Yong Liu, Jianfang Lu, **Qi Tao** and Yinhua Xia, *A well-balanced oscillation-free discontinuous Galerkin method for solving the shallow water equations*, submitted to Journal of Computational Physics.

  2. Haijin Wang, Anping Xu and **Qi Tao**, *Analysis of ultra-weak discontinuous Galerkin methods with implicit-explicit time-marching for convection-diffusion problems*, submitted to Journal of Computational Mathematics.

  3. **Qi Tao**, Yong Liu, Yan Jiang and Jianfang Lu, *An oscillation-free local discontinuous Galerkin method for nonlinear degenerate parabolic equations*, submitted to Numerical Algorithm.

Awards and Honors

- National Scholarship for Graduate Students, 2014, Northwest Normal University.

- Ya Yang Scholarship for Graduate Students, 2015, University of Science and Technology of China.

- Chiang Chen Scholarship, 2016, University of Science and Technology of China.

- Joint Ph. D student in Brown University, Sept. 2018- Sept. 2020, China Scholarship Council.

- Qiu Shi Graduate Student Scholarship, 2019, Qiu Shi Science & Technologies Foundation

Conferences/Workshops

- Participant

  - The Third International Workshop on Development and Application of High-order Numerical Methods: in honor of Professor Chi-Wang Shu on his 60th birthday, University of Science and Technology of China, Hefei, Anhui, China (Dec. 2016)
  - The Fourth International Workshop on the Development and Application of High-order Numerical Methods, Nanjing University, Nanjing, Jiangsu, China (May 2018)
  - Celebrating 75 Years of Mathematics of Computation, ICERM, Providence, RI, USA (Nov. 2018)
  - The 18th Annual Meeting of the Chinese Society of Industrial and Applied Mathematics, Changsha, Hunan, China (Nov. 2020)
  - The 19th Annual Meeting of the Chinese Society of Industrial and Applied Mathematics, Hefei, Anhui, China (Oct. 2021)

Teaching Experience

- Teaching Assistant: *Multivariable Calculus*, USTC, Spring 2017, 2018

- Teaching Assistant: *Mathematical Analysis*, USTC, Spring 2016, Fall 2016, 2017

Computer skills

- Programming: Fortran, Mathematica, Matlab, C

- Software: Mathematica, Matlab, LaTex, Tecplot, etc.