

# Qian Yuan

## Curriculum Vitae

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### Education

- 2016–2019 **Ph.D. in Mathematics**, *The Chinese University of Hong Kong*, Hong Kong, China.
- 2012–2016 **M.S. in Mathematics**, *Nanjing University*, Nanjing, China.
- 2008–2012 **B.S. in Mathematics**, *Nanjing University*, Nanjing, China.

### Professional Appointments

- 2021–now Assistant Professor, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China
- 2019–2021 Postdoc, Academy of Mathematics and Systems Science, Chinese Academy of Sciences, Beijing, China

### Publications

1. **Yuan, Qian**. Nonlinear asymptotic stability of planar viscous shocks for 3D compressible Navier-Stokes equations with periodic perturbations. *Submitted*.
2. **Yuan, Qian**. Planar Viscous Shocks with Periodic Perturbations for Scalar Multi-Dimensional Viscous Conservation Laws. To appear in *SIAM J. Math. Anal.*
3. Huang, Feimin; Xu, Lingda; **Yuan, Qian**. Asymptotic stability of planar rarefaction waves under periodic perturbations for 3-d Navier-Stokes equations. *Adv. Math.* 404 (2022), Paper No. 108452, 27 pp.
4. **Yuan, Qian**; Yuan, Yuan. Periodic perturbations of a composite wave of two viscous shocks for 1-D full compressible Navier-Stokes equations. *SIAM J. Math. Anal.* 54 (2022), no. 3, 2876–2905.
5. Huang, Feimin; **Yuan, Qian**. Stability of planar rarefaction waves for scalar viscous conservation law under periodic perturbations. *Methods Appl. Anal.* 28 (2021), no. 3, 337–353.
6. Xin, Zhouping; **Yuan, Qian**; Yuan, Yuan. Asymptotic stability of shock profiles and rarefaction waves under periodic perturbations for 1-D convex scalar viscous conservation laws. *Indiana Univ. Math. J.* 70 (2021), no. 6, 2295–2349.
7. Huang, Feimin; **Yuan, Qian**. Stability of large-amplitude viscous shock under periodic

- perturbation for 1-d isentropic Navier-Stokes equations. *Comm. Math. Phys.* 387 (2021), no. 3, 1655–1679.
8. **Yuan, Qian**; Yuan, Yuan. On Riemann solutions under different initial periodic perturbations at two infinities for 1-d scalar convex conservation laws. *J. Differential Equations* 268 (2020), no. 9, 5140–5155.
  9. Xin, Zhouping; **Yuan, Qian**; Yuan, Yuan Asymptotic stability of shock waves and rarefaction waves under periodic perturbations for 1-D convex scalar conservation laws. *SIAM J. Math. Anal.* 51 (2019), no. 4, 2971–2994.

## Awards

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| 2022 | Member of the 12th Youth Innovation Promotion Association of Chinese Academy of Sciences   |
| 2022 | The 14th “Chen Jingrun Future Star” Project, by Academy of Mathematics and Systems Science |

## Grants

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| 2023.01-<br>2025.12 | National Natural Science Foundation of China                          |
| 2022.01-<br>2026.12 | Youth Innovation Promotion Association of Chinese Academy of Sciences |
| 2019.08-<br>2021.05 | Fellowships of China Postdoctoral Science Foundation                  |

## Conference Talks

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| 2022 Dec. | New Advances in Modern Partial Differential Equations, Hubei, China                     |
| 2022 Oct. | The Eighth Japan-China Workshop on “Mathematical Topics from Fluid Mechanics”, via zoom |
| 2021 Oct. | CSIAM “Mathematical Theory in Fluid Mechanics”, Anhui, China                            |
| 2020 Nov. | The 7th Partial Differential Equations Forum for Young Researchers, Guangdong, China    |

## Research Interests

Partial differential equations in fluid mechanics, especially for the stability of wave phenomena in gas dynamics.