Yiyue Zhang
Curriculum Vitae

PERSONAL DETAILS

Institute	Beijing Institute of Mathematical Sciences and Applications
Email	`zhangyiyue@bimsa.cn`

EDUCATION AND WORK

Assistant professor   07/2024-present
BIMSA
Visiting assistant professor   07/2021-06/2024
University of California, Irvine
Ph.D Student in Mathematics   08/2016-05/2021
Duke University
Master of Science in Mathematics   09/2013-06/2016
Nankai University
Bachelor of Science in Mathematics   09/2009-06/2013
Nankai University

RESEARCH INTEREST

I am interested in geometric analysis and general relativity. More specifically, I am working on problems related to scalar curvature and geometric problems from physics. I enjoy applying the tools from PDEs, especially elliptic PDEs, to study geometry.
Here is the my Google scholar link.

PUBLICATION

1. Initial data sets with vanishing mass are contained in pp-wave spacetimes (with Sven Hirsch), https://arxiv.org/abs/2403.15984, 2024

2. Stability of Llarull's theorem in all dimensions (with Sven Hirsch), https://arxiv.org/abs/2310.14412

3. Spectral torical band inequalities and generalizations of the Schoen-Yau black hole existence (with Sven Hirsch, Demetre Kazaras, Marcus Khuri), accepted by IMRN, 2023

4. Rigid comparison geometry for Riemannian bands and open incomplete manifolds (with Sven Hirsch, Demetre Kazaras, Marcus Khuri), submitted, 2022

5. Spacetime Harmonic Functions and Applications to Mass, (with Hubert Bray, Sven Hirsch, Demetre Kazaras, Marcus Khuri), SIGMA, 2021

6. The case of equality for the spacetime positive mass theorem (with Sven Hirsch), accepted by Journal of Geometric Analysis, 2022

7. Scalar curvature volume comparison theorems for almost rigid sphere, accepted by Proceeding of AMS, 2019

8. Flatly foliated relativity (with Hubert Bray, and Benjamin Hamm, and Sven Hirsch, and James Wheeler), to appear Pure and Applied Mathematics Quarterly, 2019

TEACHING EXPERIENCE

UCI
Instructor

- *Math 3A (Fall 2021; Winter, Spring and Fall 2022; Spring and Fall 2023)*

- *Math 2E (Fall 2022)*

Duke University
Instructor

- *Calculus 122L (Fall 2020)*

- *Calculus 112L (Spring 2020)*

Nankai University
Teaching Assistant

- *Multi-variable Calculus (Spring 2015)*

TALKS

- University of Copenhagen, 01/2021

- Harvard, 03/2021

- Columbia, 04/2021

- UCI, 10/2021

- UCR, 01/2022

- Peking University, 11/2023

- BICMR, 11/2023

- Shanghai Jiao Tong University, 12/2023

- APS April meeting, 04/2024

CONFERENCES AND WORKSHOPS

- Fourth Chicago Summer School in Analysis
  The University of Chicago, 06/2017

- The Fourth Duke Mathematical Journal Conference
  Duke University, 04/2018

- Summer School in Minimal Surfaces, Flows, and Relativity
  University of Connecticut, 07/2018

- Southern California Geometric Analysis Winter School and Seminar
  UCI, 02/2020

- SCGP workshop: Mass, the Einstein Constraint Equations, and the Penrose Inequality Conjecture
Stony Brook University, 09/2023