

# Hao Zhang

zhanghao1999math@gmail.com | h-zhang21@mails.tsinghua.edu.cn  
<https://zhanghao1999math.github.io/homepage/>

## EDUCATION

### Tsinghua University

Ph.D., Mathematics | Advisor: Zhengwei Liu

Beijing, China

09/2021 - Present

### Nanjing University

B.S., Mathematics

Nanjing, China

09/2017 - 07/2021

## PUBLICATIONS

1. Bin Gui, **Hao Zhang** Analytic Conformal Blocks of  $C_2$ -cofinite Vertex Operator Algebras III: The Sewing-Factorization Theorems. arXiv:2503.23995, 2025.
2. Bin Gui, **Hao Zhang** Analytic Conformal Blocks of  $C_2$ -cofinite Vertex Operator Algebras II: Convergence of Sewing and Higher Genus Pseudo- $q$ -traces. arXiv:2411.07707, 2024.
3. Bin Gui, **Hao Zhang** Analytic Conformal Blocks of  $C_2$ -cofinite Vertex Operator Algebras I: Propagation and Dual Fusion Products, arXiv:2305.10180, 2023.

## TALKS

### Shenzhen Thematic Program "Representation Theory"

Conformal blocks and coends

SUSTech, China

04/2025

### Mathematical Physics seminar

The sewing-factorization theorem and pseudotraces for  $C_2$ -cofinite VOAs

Perimeter Institute, Canada

03/2025

### Quantum groups, tensor categories and quantum field theory

Conformal blocks and coends

University of Oslo, Norway

01/2025

### Algebra and Logic Seminar

The sewing-factorization theorem and pseudotraces for  $C_2$ -cofinite VOAs

University of Denver, USA, online

11/2024

### Vertex Algebras, Tensor Category and Related Topics

Conformal blocks and a Verlinde formula for self-dual  $C_2$ -cofinite non-rational vertex operator algebras

SJTU, China

06/2024

### Lie Group/Quantum Mathematics Seminar

Logarithmic conformal field theory: sewing and factorization

Rutgers University, USA

04/2024

### Mathematical Aspects of Quantum Theory

Conformal blocks of  $C_2$ -cofinite vertex operator algebras

TSIMF, China

01/2024

### Quantum Mathematics Seminar

Conformal blocks of  $C_2$ -cofinite vertex operator algebras

Tsinghua University, China

04/2023

## HONORS AND AWARDS

1. Future Scholar Scholarship of Tsinghua University (2021-2026)
2. Comprehensive Scholarship of Tsinghua University (2022-2024)
3. Excellent Teaching Assistant of Tsinghua University (2021-2023)
4. Outstanding Graduates of Nanjing University (06/2021)
5. National Scholarship (11/2020)

## TEACHING EXPERIENCES

Calculus, Linear algebra