Hong Yi Huang

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School of Mathematics, University of Bristol, Bristol BS8 1UG, UK

Research interests

- Group theory (finite and algebraic)
- Algebraic combinatorics
- Representation theory

Education

School of Mathematics, University of Bristol (UoB)   **United Kingdom**
- PhD in Mathematics   *Jan 2021 –*
- Supervisor: Professor Tim Burness
- Scholarship: China Scholarship Council

Department of Mathematics, Southern University of Science and Technology (SUSTech)   **China**
- Bachelor of Science   *Sept 2016 – July 2020*
- Supervisor: Professor Cai Heng Li
- Thesis: On valency problems of Saxl graphs of almost simple primitive groups with soluble stabiliser

Distinctions

Reviewer, Mathematical Reviews, American Mathematical Society	*since 2023*
Member, Combinatorial Mathematics Society of Australasia	*2022*
China Scholarship Council, UoB	*2021–25*
Outstanding undergraduate thesis, SUSTech	*2020*
First-class scholarship, SUSTech	*2017–18*
First prize, Chinese Mathematics Competition (Guangdong)	*2017*

Journal publications and preprints

[5] Finite permutation groups of rank 3
    joint with C.H. Li and Y.Z. Zhu
    22 pages, submitted, arXiv:2311.04057

[4] Base sizes of primitive groups of diagonal type
    Forum of Mathematics, Sigma, to appear

[3] On base sizes for primitive groups of product type
    joint with T.C. Burness
    Journal of Pure and Applied Algebra 227 (2023), Paper No. 107228, 43 pp

[2] On the Saxl graphs of primitive groups with soluble stabilisers
    joint with T.C. Burness
    Algebraic Combinatorics 5 (2022), 1053–1087

[1] On valency problems of Saxl graphs
joint with J. Chen
Journal of Group Theory 25 (2022), 543–577

Invited talks & seminars —————————————————————————

2024

Bases for permutation groups, Algebra Seminar, University of Warwick   *29 Jan*

2023

Bases for permutation groups, Algebra Seminar, University of Birmingham   *30 Nov*

Symmetry breaking on graphs and groups, Seminars on Discrete Mathematics, Xiamen University   *26 Sept*

Permutation groups: bases and Saxl graphs, Capital Normal University   *16 Sept*

Bases for permutation groups, SUSTech   *7 Sept*

Bases for permutation groups, Junior London Algebra Colloquium, Imperial College London   *23 Mar*

2022

Bases, distinguishing partitions and probabilistic methods, The University of Melbourne   *18 Aug*

2021

Groups, graphs and transitivity, Junior Algebra Colloquium, UoB   *21 May*

The probabilistic method in group theory, Discrete Mathematics Seminar, SUSTech   *22 Apr*

2020

On valency problems of Saxl graphs, Discrete Mathematics Seminar, SUSTech   *26 Nov*

Other talks ————————————————————————————————————

2023

Bases for permutation groups, 16th National Conference on Algebra, Quanzhou   *18 Nov*

Bases for permutation groups, 4th International Conference on Groups, Graphs and Combinatorics   *11 Nov*

Symmetry breaking on primitive groups, Seminars on Groups and Graphs, SUSTech   *4 Mar*

2022

Base-two primitive permutation groups, Young Group Theorists Workshop, SwissMAP, Les Diablerets   *5 Sept*

Base-two primitive permutation groups, Groups St Andrews, Newcastle   *4 Aug*

Base-two primitive permutation groups and their Saxl graphs, Groups and Graphs   *24 July*

Base-two primitive permutation groups, 23rd Postgraduate Group Theory Conference   *8 July*

Bases for primitive permutation groups, Group Theory Seminar, SUSTech   *24 May*

Regular orbits of primitive groups on power sets, Group Theory Seminar, SUSTech   *19 Feb*

2021

Base-two primitive permutation groups and their Saxl graphs, 43rd Australasian Combinatorics Conference   *13 Dec*

Regular suborbits of finite primitive groups, Groups, Graphs and Combinatorics   *14 Nov*

Base-two primitive permutation groups and their Saxl graphs, LMS Graduate Student Meeting   *8 Nov*

The distinguishing number of permutation groups, Group Theory Seminar, SUSTech   *9 Oct*

On valency problems of Saxl graphs, Workshop on Group Actions and Transitive Graphs   *2 Jan*

2020

On valency problems of Saxl graphs, SUSTech   *17 Nov*

Conferences & workshops —————————————————————————————————

2024

New perspectives in Computational Group Theory, University of Warwick *June*

2023

16th National Conference on Algebra, Quanzhou, China *Nov*

4th International Conference on Groups, Graphs and Combinatorics, SUSTech *Nov*

International Conference on Combinatorics and Finite Geometry, SUSTech *Sept*

CMI-HIMR Summer School: Probabilistic Group Theory, UoB *June*

Fry Conference Series: New Perspectives in Pure Mathematics, UoB *Mar*

2022

Young Group Theorists Workshop, SwissMAP, Les Diablerets *Sept*

Groups St Andrews, Newcastle University *Aug*

Simple groups, Representations and Applications, Isaac Newton Institute, University of Cambridge *July*

Groups and Graphs, Jiangxi University of Science and Technology (online) *July*

23rd Postgraduate Group Theory Conference, London *July*

2021

43rd Australasian Combinatorics Conference, Melbourne (online) *Dec*

Groups, Graphs and Combinatorics, SUSTech (online) *Nov*

LMS Graduate Student Meeting, London Mathematical Society (online) *Nov*

Workshop on Group Actions and Transitive Graphs, Kunming *Jan*

Before 2020

Workshop on Combinatorics and Graph Theory, SUSTech *Oct 2020*

International Conference on Algebraic Combinatorics, Jiaozuo *Sept 2019*

The Third International Conference on Group Actions and Transitive Graphs, SUSTech *Oct 2018*

Conference & seminar organisations —————————————————————————

4th International Conference on Groups, Graphs and Combinatorics, SUSTech *Nov 2023*

Seminars on Groups and Graphs, SUSTech (online), `https://www.gtseminar.xyz/` *since 2021*

Teaching ———

Tutorial leader, School of Mathematics, UoB
- 2023–2024 TB2: MATH10010 Introduction to Group Theory
- 2021–2022 TB1: MATH10010 Introduction to Proofs

Teaching assistant, Department of Mathematics, SUSTech
- 2019–2020 Spring: MA109 Advanced Linear Algebra
- 2019–2020 Fall: MA107 Advanced Linear Algebra I
- 2018–2019 Spring: MA104b Linear Algebra II

Homework marker, Department of Mathematics, SUSTech
- 2020–2021 Spring: MA321 Group Representation Theory, and MA219-16 Elementary Number Theory
- 2019–2020 Fall: MA321 Group Representation Theory, and MA219 Abstract Algebra (H)
- 2018–2019 Spring: MAT8010 Combinatorics (PG)
- 2017–2018 Fall: MA219-16 Elementary Number Theory, and MA213-16 Mathematical Analysis

Research visits

2023: SUSTech (1 month); Capital Normal University (1 week); Xiamen University (1 week)
2021: SUSTech (2 months)
2020: SUSTech (6 months)