

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

Jan 2021 –

- PhD in Mathematics
- Supervisor: Professor Tim Burness
- Scholarship: China Scholarship Council

Department of Mathematics, Southern University of Science and Technology (SUSTech)

China

Sept 2016 – July 2020

- Bachelor of Science
- Supervisor: Professor Cai Heng Li
- Thesis: On valency problems of Saxl graphs of almost simple primitive groups with soluble stabiliser

Distinctions

Alumni Grant: Conference Travel Fund (£300), UoB	2024
Associate member, London Mathematical Society	since 2024
Referee, Journal of Algebra	since 2024
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

- [6] H.Y. Huang, C.H. Li and Y.L. Xie, *Fixers and derangements of finite permutation groups*, submitted (2024), 40 pp.
arXiv: 2404.18753
- [5] H.Y. Huang, C.H. Li and Y.Z. Zhu, *Finite permutation groups of rank 3*, submitted (2023), 22 pp.
arXiv: 2311.04057

- [4] H.Y. Huang, *Base sizes of primitive groups of diagonal type*, **Forum Math. Sigma**, 12 (2024), Paper No. e2, 43 pp.
doi: 10.1017/fms.2023.121
- [3] T.C. Burness and H.Y. Huang, *On base sizes for primitive groups of product type*, **J. Pure Appl. Algebra** 227 (2023), Paper No. 107228, 43 pp.
doi: 10.1016/j.jpaa.2022.107228
- [2] T.C. Burness and H.Y. Huang, *On the Saxl graphs of primitive groups with soluble stabilisers*, **Algebr. Comb.** 5 (2022), 1053–1087.
doi: 10.5802/alco.238
- [1] J. Chen and H.Y. Huang, *On valency problems of Saxl graphs*, **J. Group Theory** 25 (2022), 543–577.
doi: 10.1515/jgth-2021-0123

Conference & seminar organisation

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| Bristol Junior Algebra and Combinatorics Seminar (BJACS), UoB | 2024 |
| <ul style="list-style-type: none"> • Founding co-organiser • With Marina Anagnostopoulou-Merkouri and Merlin Haith Rowlett • Website: https://sites.google.com/view/bjacs/home | |
| 4th International Conference on Groups, Graphs and Combinatorics, SUSTech | Nov 2023 |
| <ul style="list-style-type: none"> • With a group of people led by Cai Heng Li | |
| Seminars on Groups and Graphs, SUSTech (online) | 2021-24 |
| <ul style="list-style-type: none"> • Founding co-organiser • With Zhaochen Ding, Yilin Xie (2021-23), Junyan Chen (2024) and Fu-Gang Yin (2024) • Website: https://www.gtseminar.xyz/ | |

Conference invitations

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| <i>Finite Groups, Fusion Systems and Applications</i> , Mathematical Research Institute Oberwolfach | Mar 2025 |
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Invited talks & seminars

2024

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| <i>Permutations, bases and low rank groups</i> , RWTH Aachen University, Germany | 13 June |
| <i>Permutations, bases and low rank groups</i> , Heinrich Heine University Düsseldorf, Germany | 11 June |
| <i>Permutations, bases and low rank groups</i> , Technische Universität Kaiserslautern, Germany | 6 June |
| <i>Permutations, bases and low rank groups</i> , Algebra Seminar, UoB | 19 Mar |
| <i>Bases for permutation groups</i> , Algebra Seminar, University of Warwick | 29 Jan |

2023

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| <i>Bases for permutation groups</i> , Algebra Seminar, University of Birmingham | 30 Nov |
| <i>Symmetry breaking on graphs and groups</i> , Seminars on Discrete Mathematics, Xiamen University | 26 Sept |
| <i>Permutation groups: bases and Saxl graphs</i> , Capital Normal University | 16 Sept |
| <i>Bases for permutation groups</i> , SUSTech | 7 Sept |
| <i>Bases for permutation groups</i> , Junior London Algebra Colloquium, Imperial College London | 23 Mar |

2022

<i>Bases, distinguishing partitions and probabilistic methods</i> , The University of Melbourne	18 Aug
2021	
<i>Groups, graphs and transitivity</i> , Junior Algebra Colloquium, UoB	21 May
<i>The probabilistic method in group theory</i> , Discrete Mathematics Seminar, SUSTech	22 Apr
2020	
<i>On valency problems of Saxl graphs</i> , Discrete Mathematics Seminar, SUSTech	26 Nov

Other talks

2024	
<i>The generalised Saxl graphs of finite permutation groups</i> , Topics in Group Theory, Padova, Italy	Sept
<i>Permutation groups of rank three</i> , Group Theory in Florence IV, Florence, Italy	July
2023	
<i>Bases for permutation groups</i> , 16th National Conference on Algebra, Quanzhou	18 Nov
<i>Bases for permutation groups</i> , 4th International Conference on Groups, Graphs and Combinatorics	11 Nov
<i>Symmetry breaking on primitive groups</i> , Seminars on Groups and Graphs, SUSTech	4 Mar
2022	
<i>Base-two primitive permutation groups</i> , Young Group Theorists Workshop, SwissMAP, Les Diablerets	5 Sept
<i>Base-two primitive permutation groups</i> , Groups St Andrews, Newcastle, UK	4 Aug
<i>Base-two primitive permutation groups and their Saxl graphs</i> , Groups and Graphs	24 July
<i>Base-two primitive permutation groups</i> , 23rd Postgraduate Group Theory Conference	8 July
<i>Bases for primitive permutation groups</i> , Group Theory Seminar, SUSTech	24 May
<i>Regular orbits of primitive groups on power sets</i> , Group Theory Seminar, SUSTech	19 Feb
2021	
<i>Base-two primitive permutation groups and their Saxl graphs</i> , 43rd Australasian Combinatorics Conference	13 Dec
<i>Regular suborbits of finite primitive groups</i> , Groups, Graphs and Combinatorics	14 Nov
<i>Base-two primitive permutation groups and their Saxl graphs</i> , LMS Graduate Student Meeting	8 Nov
<i>The distinguishing number of permutation groups</i> , Group Theory Seminar, SUSTech	9 Oct
<i>On valency problems of Saxl graphs</i> , Workshop on Group Actions and Transitive Graphs	2 Jan
2020	
<i>On valency problems of Saxl graphs</i> , SUSTech	17 Nov

Other conferences

2024	
<i>Topics in Group Theory</i> , University of Padova	Sept
<i>Group Theory in Florence IV</i> , University of Florence	July
<i>New perspectives in Computational Group Theory</i> , University of Warwick	June
2023	
<i>16th National Conference on Algebra</i> , Quanzhou, China	Nov
<i>International Conference on Combinatorics and Finite Geometry</i> , SUSTech	Sept
<i>CMI-HIMR Summer School: Probabilistic Group Theory</i> , UoB	June
<i>Fry Conference Series: New Perspectives in Pure Mathematics</i> , UoB	Mar
2022	
<i>Young Group Theorists Workshop</i> , SwissMAP, Les Diablerets	Sept
<i>Groups St Andrews</i> , Newcastle University	Aug

<i>Simple groups, Representations and Applications</i> , Isaac Newton Institute, University of Cambridge	<i>July</i>
<i>Groups and Graphs</i> , Jiangxi University of Science and Technology (online)	<i>July</i>
<i>23rd Postgraduate Group Theory Conference</i> , London	<i>July</i>
2021	
<i>43rd Australasian Combinatorics Conference</i> , The University of Melbourne (online)	<i>Dec</i>
<i>Groups, Graphs and Combinatorics</i> , SUSTech (online)	<i>Nov</i>
<i>LMS Graduate Student Meeting</i> , London Mathematical Society (online)	<i>Nov</i>
<i>Workshop on Group Actions and Transitive Graphs</i> , Kunming	<i>Jan</i>
Before 2020	
<i>Workshop on Combinatorics and Graph Theory</i> , SUSTech	<i>Oct 2020</i>
<i>International Conference on Algebraic Combinatorics</i> , Jiaozuo	<i>Sept 2019</i>
<i>The Third International Conference on Group Actions and Transitive Graphs</i> , SUSTech	<i>Oct 2018</i>

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

2024: Imperial (3 days); TU Kaiserslautern (1 week); HHU Düsseldorf (2 days); RWTH Aachen (3 days); Warwick (1 day); Milano-Bicocca (3 days)

2023: SUSTech (1 month); Capital Normal University (1 week); Xiamen University (1 week)

2021: SUSTech (2 months)

2020: SUSTech (6 months)