

# Ismael Sierra

Department of Mathematics  
University of Toronto  
Bahen Centre  
40 St. George Street, Room 6290  
Toronto, Ontario  
Canada  
M5S 2E4

ismael.sierra@utoronto.ca  
<https://ismaelsierramath.github.io/>

## Employment

**University of Toronto**, (August 2023– July 2026)

Postdoctoral fellow.

## Education

**DPhil Mathematics, Cambridge University**, (2019–2023)

Supervisor: Professor O. Randal-Williams.

**MMath Mathematics, Cambridge University**, (2015–2019)

## Grants, Honours and Awards

Smith-Rayleigh and Knight-Rayleigh Price, Group 2, 2021.

Research Scholarship Trinity College Cambridge, 2019.

## Publications and Preprints

Ismael Sierra, *Homological stability of diffeomorphism groups of high dimensional manifolds via  $E_k$ -algebras*, arXiv e-prints (2022), arXiv:2209.10243. (pdf)

Ismael Sierra, *Homological stability of spin mapping class groups and quadratic symplectic groups*, arXiv e-prints (2022), arXiv:2211.06219. (pdf)

## Talks, Conferences and Seminars

*Homological stability of quadratic symplectic groups*–Stability in Topology, Arithmetic, and Representation Theory; Purdue University, July 17-21, 2023.

*Homological stability of moduli spaces via  $E_k$ -algebras*–HHH follow on: Homotopy: fruit of the fertile furrow, Isaac Newton Institute; Cambridge, June 12-16, 2023.

Workshop on Homology of Configuration Spaces and related topics; Paris, May 16-23, 2023.

*Homological stability of diffeomorphism groups of manifolds using  $E_k$ -algebras*– Differential Geometry and Topology seminar, University of Cambridge, March 8, 2023.

*Homological stability of diffeomorphism groups of manifolds using  $E_k$ -algebras*– Geometry and Topology seminar, Warwick University, January 10, 2023.

*Homological stability of diffeomorphism groups of manifolds via  $E_k$ -algebras*– Geometry/Topology seminar University of Toronto (online), October 31, 2022.

Encuentro de Jóvenes Topólogos/ Encuentro de Topología; Zaragoza, October 18-22, 2022.

European Autumn School in Topology 2022; Utrecht, September 26-30, 2022.

*Splitting complexes*– Young Topologists Meeting; Copenhagen, July 18-22, 2022.

*Homological stability of diffeomorphism groups and splitting complexes of manifolds*– British Topology Meeting; Durham University, April 12-14, 2022.

*Homological stability of diffeomorphism groups and splitting complexes of manifolds*– Algebra/Topology seminar; University of Copenhagen, February 4, 2022.

*Homological stability of diffeomorphism groups and splitting complexes of manifolds*– Purdue Zoom topology seminar (online), September 22, 2021.

Oberwolfach Seminar: Cellular  $E_k$ -Algebras (hybrid meeting), May 23-29, 2021.

*$E_k$ -algebras and diffeomorphism groups*– Young Topologists Meeting (online), July 5-16, 2021.

Heidelberg Laureate Forum 2017; Heidelberg, September 24-29, 2017.

## Teaching Experience

**Instructor** (at University of Toronto)

Fall 2023 MAT 223 Linear Algebra I

**Supervisor** (at Cambridge University)

IB Analysis and Topology, Michaelmas 2019.

II Algebraic Topology, Michaelmas 2019, revision Easter 2020, Michaelmas 2020, revision Easter 2021, Michaelmas 2021, revision Easter 2022, Michaelmas 2022.

IB Geometry, Lent 2020, revision Easter 2020, Lent 2021, revision Easter 2021, Lent 2022.

II Differential Geometry, Lent 2020, revision Easter 2020, Lent 2021, revision Easter 2021, Lent 2022, revision Easter 2022.