

Gianmarco BROCCHI

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PERSONAL DETAILS

Born on 9th October 1990 in Taranto, Italy

ADDRESS:

Mathematical Sciences,
Chalmers University of Technology
and the University of Gothenburg,
SE-412 96, Göteborg, Sweden

CITIZENSHIP: Italian

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MAIN EDUCATION

OCT 2021 Ph.D. in PURE MATHEMATICS, **University of Birmingham**, UK
Thesis: “[Sharp and Optimal Inequalities in Harmonic Analysis](#)”
Supervisors: Dr. Maria Carmen REGUERA and Prof. Jonathan BENNETT

SEPT 2017 M.Sc. in MATHEMATICS, **University of Bonn**, Germany
Thesis: “[Sharp Fourier restriction theory and Strichartz estimates](#)”
Advisor: Dr. Diogo OLIVEIRA E SILVA

OCT 2014 B.Sc. in MATHEMATICS, **University of Pisa**, Italy
Thesis: “[Condizioni Tauberiane e Spazi di Hardy](#)”
Advisor: Prof. Vladimir GEORGIEV

APPOINTMENTS

2022 – 2024: **Wallenberg Postdoc with Andreas Rosén**
at Chalmers University of Technology and the University of Gothenburg

2021 – 2022: **Teaching Fellow** at the University of Birmingham

PUBLICATIONS

4. REFINED TWO WEIGHT ESTIMATES FOR THE BERGMAN PROJECTION,
to appear in *Collectanea Mathematica*, [arXiv:2110.15936](#)
 3. QUADRATIC SPARSE DOMINATION AND WEIGHTED ESTIMATES FOR NON-INTEGRAL SQUARE FUNCTIONS,
with Julian Bailey and Maria Carmen Reguera, [arxiv:2007.15928](#), submitted.
 2. A SPARSE QUADRATIC $T1$ THEOREM,
New York J. Math. **26** (2020), 1232–1272.
 1. SHARP STRICHARTZ INEQUALITIES FOR FRACTIONAL AND HIGHER ORDER SCHRÖDINGER EQUATIONS,
with Diogo Oliveira e Silva and René Quilodrán,
Analysis & PDE **13** (2020) 477–526. [arXiv:1804.11291](#)
- WHAT IS SPARSE DOMINATION AND WHY IS IT SO PLENTIFUL? ,
Proceedings of the 3rd BYMAT conference (2020) TEMat monográficos (ISSN 2660-6003)

GRANTS AND AWARDS

2018: 2nd prize in the poster competition, awarded by the University of Birmingham.

2017–2021: EPSRC Doctoral training grant. Three and a half year grant for tuition fees and stipend.

2015–2016: One year ERASMUS+ scholarship, awarded by the University of Pisa.

OTHER ACADEMIC ACTIVITIES

Referee for the *Journal of Mathematical Analysis and Applications*.

Co-organiser of the *Analysis and Probability seminar* at Chalmers, the *Analysis Reading Seminar* at the University of Birmingham, and the following workshops:

June 2019 **Harmonic Analysis in non-homogeneous settings and applications**
Funded by: Heilbronn Institute; EPSRC; the LMS and the University of Birmingham.

Apr 2019 **British Young Mathematicians Colloquium 2019**
Funded by the Magic Maths Consortium and the University of Birmingham.

TALKS BY INVITATION

- **Kato & Cauchy**

Jan 2023 | *Young Researchers Workshop in Harmonic Analysis, Politecnico di Torino*

- **Two weight estimates for the Bergman projection**

Jan 2022 | *Analysis seminar, Bonn*

Oct 2021 | *Workshop CHAP: Complex and Harmonic Analysis in Padova*

- **Sparse T_1 theorems**

Jun 2021 | *Harmonic Analysis E-Seminars, forthcoming*

Jun 2020 | *Virtual Harmonic Analysis Seminars, UK Harmonic Analysis group*

- **Quadratic Sparse Domination**

May 2022 | *Miniworkshop on Harmonic Analysis, Lund, Sweden*

Dec 2020 | *LMS Harmonic Analysis and PDEs Meeting*

- **Random shifted dyadic grids and what they can do for you**

May 2020 | *Analysis & PDE Working Seminar, University of Minnesota*

- **What does extremise a Strichartz estimate?**

Feb 2021 | *Graduate Analysis Seminar, University of Toronto, Canada*

Mar 2019 | *Pure Maths Postgraduate Seminar, University of Sheffield, UK*

- **Existence of extremizers for a Strichartz estimate for the 4th order Schrödinger equation**

Feb 2018 | *Workshop on Harmonic analysis and Nonlinear Evolution Equations, Pisa, Italy*

LANGUAGES

ITALIAN (mother-tongue), ENGLISH (fluent), SWEDISH (basic), GERMAN (basic).