

Rosario Mennuni

Postdoctoral researcher

✉ R.Mennuni@posteo.net
🌐 <http://poisson.phc.dm.unipi.it/~mennuni/>
ORCID [0000-0003-2282-680X](https://orcid.org/0000-0003-2282-680X)
27th November 2023

Professional Experience

- 2021–present **Postdoctoral researcher**, *Università di Pisa*
2020–2021 **Postdoctoral researcher**, *Westfälische Wilhelms-Universität Münster*

Education

- 2016–2020 **PhD in Mathematics**, *University of Leeds*
Supervisors H. Dugald Macpherson and Vincenzo Mantova
Thesis Title Invariant types in model theory
2013–2016 **Laurea Magistrale in Matematica (M.S.)**, *Università di Pisa*, 110/110 cum laude
Advisor Alessandro Berarducci
Thesis Title Definable groups, NIP theories, and the Ellis Group Conjecture
2009–2013 **Laurea Triennale in Matematica (B.S.)**, *Università di Pisa*, 109/110
Advisor Alessandro Berarducci
Thesis Title Il Teorema di Keisler-Shelah

Research Interests

Model theory, neostability theory, type spaces, mathematical logic

Publications and preprints

- Self-divisible ultrafilters and congruences in $\beta\mathbb{Z}$* , with Mauro Di Nasso, Lorenzo Luperi Baglini, Moreno Pierobon and Mariacarla Ragosta, *Journal of Symbolic Logic*, <https://doi.org/10.1017/jsl.2023.51>
- Some definable types that cannot be amalgamated*, with Martin Hils, *Mathematical Logic Quarterly*, 69, 46–49 (2023). doi.org/10.1002/malq.202200046
- On double-membership graphs of models of Anti-Foundation*, with Bea Adam-Day and John Howe, *Bulletin of Symbolic Logic*, 29(1), 128–144 (2023) doi.org/10.1017/bsl.2022.37
- The domination monoid in ω -minimal theories*, *Journal of Mathematical Logic*, Vol. 22, No. 01, 2150030 (2022), doi.org/10.1142/S0219061321500306
- Weakly binary expansions of dense meet-trees*, *Mathematical Logic Quarterly*, 68:32–47 (2022). doi.org/10.1002/malq.202000045
- Product of invariant types modulo domination-equivalence*, *Archive for Mathematical Logic*, 59, 1–29 (2020), doi.org/10.1007/s00153-019-00676-9
- The Amalgamation Property for automorphisms of ordered abelian groups*, with Jan Dobrowolski, arxiv.org/abs/2209.03944
- Vector spaces with a union of independent subspaces*, with Alessandro Berarducci and Marcello Mamino, arxiv.org/abs/2209.03867
- Model-theoretic dividing lines via posets*, with Darío García, arxiv.org/abs/2209.00571
- The domination monoid in henselian valued fields*, with Martin Hils, arxiv.org/abs/2108.13999

Editorial Activity

- 2023–present **Reviewer**, *The Journal of Symbolic Logic*
2020–present **Reviewer**, *Archive for Mathematical Logic*

Reviews

- 2023 **zbMATH review**, V. Guingona, On VC-density in VC-minimal theories, <https://zbmath.org/7598586>
- 2023 **zbMATH review**, G. Metcalfe, L. Reggio, Model completions for universal classes of algebras: necessary and sufficient conditions, <https://zbmath.org/7657286>
- 2023 **zbMATH review**, A. Berenstein, E. Vassiliev, Definable groups in dense pairs of geometric structures, <https://zbmath.org/7541616>

Mentoring and supervision

- 2023 **Supervisor**, of Alessandro Sferlazza (Master Student at Scuola Normale Superiore (Pisa) for his 4th year *colloquio*)
- 2021 **Mentor**, of Simone Ramello (Master Student at the Università di Torino) during his 5 month Erasmus+ traineeship at WWU Münster

Outreach

- 2023 **Responsabile di laboratorio**, *Infinito, infinito più uno, e cose parecchio più grandi*, XIX settimana matematica (outreach event aimed at senior high-school students), Università di Pisa

Scholarships, Awards and Grants

- 2019 London Mathematical Society Postgraduate Research Conference Grant (Scheme 8), towards the organisation of the British Postgraduate Model Theory Conference 2020 (£2k). Cofunded by the School of Mathematics of the University of Leeds (£4k), guaranteed by the British Logic Colloquium (£750). Principal investigator
- 2019 ASL Travel Grant Award to attend “Logic Colloquium 2019”, Prague
- 2018 ASL Travel Grant Award to attend “From Permutation Groups to Model Theory: a Workshop Inspired by the Interests of Dugald Macpherson, on the Occasion of His 60th Birthday”, Edinburgh
- 2017 ASL Travel Grant Award to attend “Set-Theoretic and Topological Methods in Model Theory”, Tezpur
- 2017 ASL Travel Grant Award to attend “Model Theory and Applications”, Mons
- 2017 Premio Tesi 3+2 AILA 2017: Award for one of the best master theses in logic in Italy
- 2016–2020 Leeds Anniversary Research Scholarship

Conference Talks and Posters

- O-minimality, domination, and preorders (Freiburg, Nov '23, invited)
- The Amalgamation Property for automorphisms of ordered abelian groups (Pisa, Sep '23, contributed)
- Some definable types in the wild (Leeds, May '23, invited)
- Automorphisms of ordered abelian groups, the Amalgamation Property, and dependent positive theories (Leeds, Jan '23, contributed)
- The domination monoid in henselian valued fields (Colmar, Sep '21, invited)
- Viewpoints on Stability and Forcing (mini-course) (Short Model Theory Huddle 2, Jun '21, invited)
- Domination and Products in Unstable Theories (Leeds, Jan '19, invited)
- Product of Invariant Types Modulo Domination-Equivalence (Oxford, Sep '19, contributed)
- Product of Invariant Types Modulo Domination-Equivalence (Prague, Aug '19, contributed)
- Product of Invariant Types Modulo Domination-Equivalence (Manchester, Jan '19, contributed)
- Notions of Domination Between Invariant Types (Tezpur, Sep '17, contributed)
- Product of Invariant Types Modulo Domination-Equivalence (Edinburgh, Sep '18, poster)

Seminar Talks, invited

- Some definable types in the wild (Münster, Oberseminar Modelltheorie und Gruppen)
- Some definable types in the wild (Lyon, Séminaire Logique Mathématique)
- Ultrafilters, congruences and profinite groups (Freiburg, Oberseminar Logik)

- Automorphisms of ordered abelian groups and dependent positive theories (Bonn, Oberseminar Logik)
- Model theory of ordered abelian groups (Torino, Logic working group)
- Automorphisms of ordered abelian groups and positive logic (Manchester, Logic seminar)
- Automorphisms of ordered abelian groups and positive logic (Caserta, Logic seminar)
- The domination monoid in henselian valued fields (University of East Anglia, Pure mathematics seminar)
- The domination monoid (Konstanz, TDE seminar)
- The domination monoid (Caserta, Logic seminar)
- The domination monoid (Bogotá, Seminario Flotante de Lógica Matemática)
- Product of Invariant Types Modulo Domination-Equivalence (Torino)
- Double-Membership Graphs of Models of Anti-Foundation (Manchester, Logic Seminar)
- Product of Invariant Types Modulo Domination-Equivalence (Imperial College London, Logic Seminar)

Seminar Talks, contributed

- Teoria dei modelli della doppia appartenenza (Pisa, Seminario di Logica)
- Automorfismi di gruppi abeliani ordinati e logica positiva (Pisa, Seminario di Logica)
- Model theory of double-membership (Münster, Oberseminar Modelltheorie, Geometrie und Gruppentheorie)
- The domination monoid (Münster, Oberseminar Modelltheorie, Geometrie und Gruppentheorie)
- The domination monoid in ω -minimal theories (Leeds, online Logic Seminar)
- Domination-equivalence in ω -minimal theories (Leeds, Postgraduate Logic Seminar)
- Double-Membership Graphs of Models of Anti-Foundation (Leeds, Models and Sets Seminar)
- The Weird, The Bad, and The Ugly (Leeds, Pure Postgraduate Seminar)
- Morley's Theorem on the Number of Countable Models, (Leeds, Models and Sets Seminar)
- Types, Products and Domination (Leeds, Postgraduate Logic Seminar)
- Domination and Products of Invariant Types: a Counterexample (Leeds, Model Theory Seminar)
- An Infinitesimal Glimpse of Non-Standard Analysis (Leeds, Pure Postgraduate Seminar)
- Notions of Domination Between Invariant Types (Leeds, Model Theory Seminar)
- First-order Quantifiers and Where to Eliminate Them (Leeds, Pure Postgraduate Seminar)
- Externally Definable Sets: An Introduction and An Application (Leeds, Model Theory Seminar)
- Keisler Measures (Leeds, Postgraduate Model Theory and Set Theory Seminar)
- Independent families and RK-incomparable ultrafilters (Pisa)
- Easton forcing (Pisa)

Organisational Duties

- 2022–present Organiser of the Logic Seminar, Pisa
- 2023 Organiser of the conference Logical Methods in Ramsey Theory and Related Topics, Pisa
- 2022 Local Organiser of the Ultramath 2022 conference, Pisa
- 2020 Organiser of the BPGMT Conference 2020, Leeds
- 2017 Organiser of the BPGMT Conference 2017, Leeds
- 2016–2019 Co-organiser of the postgraduate logic seminar, Leeds

Research visits

- Oct '23 Münster, collaboration with Martin Hils
- Oct '23 Lyon, collaboration with Frank Wagner
- May '23 Leeds, collaboration with Pablo Andújar Guerrero and Pantelis Eleftheriou
- May '22 Manchester, collaboration with Jan Dobrowolski

Conferences and Workshops

- Nov '23 2023 Geomod Conference, Freiburg
- Sep '23 XXII Congresso dell'Unione Matematica Italiana, Pisa
- Jul '23 Logical Methods in Ramsey Theory and Related Topics, Pisa
- May '23 Impromptu Leeds–McMaster model theory days, Leeds
- Jan '23 British Postgraduate Model Theory Conference, Leeds
- Dec '22 Model Theory Conference in celebration of Ludomir Newelski's 60th birthday, Będlewo
- Nov '22 A tale of modules and models, a celebration in honour of Carlo Toffalori on his retirement, Firenze
- Jun '22 Model theory and applications, Cetraro
- Jun '22 Ultramath 2022, Pisa
- Sep '21 AGRUME meeting, Colmar
- Jun '21 Short Model Theory Huddle 2, online
- Apr '21 British Postgraduate Model Theory Conference, online
- May '20 Short Model Theory Huddle, online
- Feb '20 Fifth Workshop on Generalised Baire Spaces, Bristol
- Jan '20 British Postgraduate Model Theory Conference, Leeds
- Sep '19 British Logic Colloquium 2019, Oxford
- Aug '19 Logic Colloquium 2019, Prague
- Jun '19 Applications of the Model Theory of Fields with Operators, Manchester
- Jan '19 Workshop on NIP and Groups, Leeds
- Jan '19 British Postgraduate Model Theory Conference, Manchester
- Sep '18 From Permutation Groups to Model Theory: a Workshop Inspired by the Interests of Dugald Macpherson, on the Occasion of His 60th Birthday, Edinburgh
- Aug '18 Model-theoretic Methods in Number Theory and Algebraic Differential Equations, Manchester
- Apr '18 Workshop on model theory of finite and pseudofinite structures, Leeds
- Mar '18 Model Theory and Applications, Paris
- Mar '18 Model Theory of Valued fields, Paris
- Feb '18 Model Theory and Combinatorics, Paris
- Jan '18 British Postgraduate Model Theory Conference, Oxford
- Sep '17 Set-Theoretic and Topological Methods in Model Theory, Tezpur
- Jul '17 Model Theory, Będlewo
- Jun '17 Model Theory in Wrocław 2017, Wrocław
- Jan '17 British Postgraduate Model Theory Conference, Leeds
- Jan '17 Model Theory and Applications, Mons
- Jun '16 International Conference on Model Theory, Notre Dame
- Aug '15 PhD-AILA 2015, Gargnano
- Aug '15 Logic Colloquium 2015, Helsinki
- May '15 COMFORT, Convegno in onore di Marco Forti, Dipartimento di Matematica, Pisa
- Apr '14 XXV incontro dell'Associazione Italiana di Logica e sue Applicazioni, Pisa
- Jan '13 Ultra-Combinatorics, Pisa

Summer/Winter Schools and Research Periods

- Jan–Apr '18 Model Theory, Combinatorics and Valued Fields Trimester, Institut Henri Poincaré, Paris
- Jan '18 Research School Model Theory, Combinatorics and Valued Fields, Luminy
- Aug '17 Scuola Estiva di Logica 2017, Gargnano
- Jul '16 Summer School in Tame Geometry, Konstanz
- Jun '16 Thematic Programme on Model Theory, Graduate Summer School, Notre Dame

- Aug '15 Scuola Estiva di Logica 2015, Gargnano
Jul '15 Scandinavian Logic Society Summer School in Logic 2015, Helsinki

Teaching

- Spring '22 Model Theory, postgraduate course, Università di Pisa
Autumn '19 Computer Workshops (≈ 70 students) for Mathematics 1/Number Systems, University of Leeds
Autumn '19 Tutorials (≈ 10 students) for MATH1010 Mathematics 1, University of Leeds
Spring '19 Tutorials (≈ 10 students) for MATH1026 Sets, Sequences and Series, University of Leeds
Autumn '18 Computer Workshops (≈ 70 students) for Mathematics 1/Number Systems, University of Leeds
Autumn '18 Tutorials (≈ 10 students) for MATH1025 Number Systems, University of Leeds
Autumn '17 Computer Workshops (≈ 70 students) for Mathematics 1/Number Systems, University of Leeds
Autumn '17 Tutorials (≈ 10 students) for MATH1025 Number Systems, University of Leeds
Spring '17 Tutorials (≈ 10 students) for MATH1026 Sets, Sequences and Series, University of Leeds
Autumn '16 Computer Workshops (≈ 70 students) for Mathematics 1/Number Systems, University of Leeds
Autumn '16 Tutorials (≈ 10 students) for MATH1025 Number Systems, University of Leeds

Professional Memberships

- 2021–present Member of Unione Matematica Italiana (UMI)
2021–present Member of Associazione Italiana di Logica e Sue Applicazioni (AILA)
2020–present Member of Istituto Nazionale di Alta Matematica (INdAM), GNSAGA group
2016–2020 Student member of the Association for Symbolic Logic (ASL)

Languages

- Native Italian, Sanferdinandese (Apulian dialect)
Fluent English
Basic French, German