Curriculum vitae

1 Personal Information

- First name: Dragoş
- Surname: Manea
- Date of birth: 28th November 1998
- Street address: Str. Lunca Bârzești nr.2, bl.21, sc.1, ap.31, București, Romania
- E-mail addresses: dmanea28@gmail.com | dmanea@imar.ro
- Phone: +40756510444
- Website: `https://dragosmanea.go.ro`

2 Education

- 2021 - present: PhD student at "Simion Stoilow" Mathematical Institute of the Romanian Academy, Bucharest
  Subject: *Asymptotic phenomena of diffusion equations* – supervisors:
  Prof. Ioan-Liviu Ignat (e-mail: liviu.ignat@imar.ro) and
  Assoc. Prof. Cristian Cazacu (e-mail: cristian.cazacu@fmi.unibuc.ro).

- 2020-2021: Master of Science in Mathematical Sciences, University of Oxford (Distinction Award)
  Master's Dissertation: *Spectral sets and normal dilations* – supervisor:
  Prof. Stuart White

- 2017-2020: Bachelor in Mathematics – Faculty of Mathematics and Computer Science, University of Bucharest, Romania (valedictorian)
  Bachelor Thesis: *Critical Point Theory for Poincaré Relativistic Lagrangian* – supervisor:
  Prof. Cristian Bereanu

- 2013-2017: High School – *Andrei Şaguna* National College, Braşov, Romania (valedictorian)

3 Working Experience

- 2021 - present: Research Assistant at "Simion Stoilow" Mathematical Institute of the Romanian Academy, Bucharest

4 Grants

- January 2024 - present – member in the PNRR project CF149/31.07.2023
  "Conformal Aspects of Geometry and Dynamics", PNRR–III-C9–2023–I8;

- January 2023 - May 2024 – member in the national Grant TE 146/2022 "Fine analysis of PDEs"
  PN-III-P1-1.1-TE-2021-1539;

- May 2021 - December 2023 – member in the national Grant 0794/2020
  "Spectral Methods in Hyperbolic Geometry" PN-III-P4-ID-PCE-2020-0794.

5 Publications

- Timothée Crin-Barat and Dragoș Manea, *Asymptotic-preserving finite difference method for partially dissipative hyperbolic systems*, 2025, accepted in IMA Journal of Numerical Analysis, arXiv:2404.06380.

- María del Mar González, Liviu I. Ignat, Dragoș Manea and Sergiu Moroianu, *Concentration limit for non-local dissipative convection-diffusion kernels on the hyperbolic space*, Nonlinear Analysis, vol. 248, 2024, 113618, DOI 10.1016/j.na.2024.113618.

- Cristian Cazacu, Liviu I. Ignat and Dragoş Manea, *The Hardy inequality and large time behaviour of the heat equation on $\mathbb{R}^{N-k} \times (0, \infty)^k$*, Journal of Differential Equations, vol. 375, 2023, pag. 682-705, DOI 10.1016/j.jde.2023.09.007.

6 Preprints

- Mihai Bucataru and Dragoș Manea, *Discrete Laplacians on the hyperbolic space – a compared study*, preprint 2024, submitted, arXiv:2409.01211.

- Mauritz Cartier van Dissel, Paweł Gora and Dragoș Manea, *A Payne-Whitham model of urban traffic networks in the presence of traffic lights and its application to traffic optimisation*, preprint 2024, submitted, arXiv:2401.04436.

7 Conferences and talks

- 15 - 16 May 2025 – "Workshop for Young Researchers in Mathematics – 14th Edition" at Alexandru Ioan Cuza University, Iași, Romania, `https://fmi.univ-ovidius.ro/en/cercetare/wyrm2025/`:
  - presentation entitled *Mesh-free method for Dirichlet eigenpairs of the Laplacian with potential on star-shaped domains.*

- 26 - 30 August 2024 – "The 16th French Romanian Colloquium" at University Politehnica Bucharest, Romania, `https://16colfrro.sciencesconf.org/`:
  - presentation entitled *Discrete Laplacians on the hyperbolic space – a compared study* – joint work with Mihai Bucataru (Bucharest).

- 5 - 9 February 2024 – "Final Conference of the Action *Mathematical Models for Interacting Dynamics on Networks*" at University of Minho, Braga, Portugal, `https://w3.math.uminho.pt/FinalConfMatDynNet`:
  - presentation entitled *A Payne–Whitham model of urban traffic networks in the presence of traffic lights* – joint work with Mauritz Cartier van Dissel (Vienna) and Paweł Gora (Warsaw).

- 30 June - 5 July 2023 – "The Tenth Congress of Romanian Mathematicians " in Pitești, Romania, `http://www.imar.ro/~congmatro10/`:
  - presentation entitled *Concentration limit for non-local dissipative convection-diffusion kernels on the hyperbolic space* – based on a collaboration with Prof. María del Mar González (Universidad Autónoma de Madrid), Prof. Ioan-Liviu Ignat (Bucharest) and Prof. Sergiu Moroianu (Bucharest).

- 6 - 10 March 2023 – "Nonlocal Equations: Analysis and Numerics" at Bielefeld University, Bielefeld, Germany, `https://www.sfb1283.uni-bielefeld.de/2023_BI-nonlocal/`:
  - presentation entitled *Concentration limit for non-local dissipative convection-diffusion kernels on the hyperbolic space.*

- 5 - 10 October 2022 – "Heating up networks - analysis meets applications meeting" at Fraunhofer Institute for Industrial Mathematics, Keiserslautern, Germany, `https://mat-dyn-net.eu/en/activities/ca18232-heating-up-networks-analysis-meets-applications-workshop`:
  - presentation entitled *A Non-local non-linear convection-diffusion problem on metric trees* – based on a joint work with Prof. Ioan-Liviu Ignat (Bucharest).

- 21 August - 02 September 2022 – "IX Partial differential equations, optimal design and numerics" at Centro de Ciencias de Benasque "Pedro Pascual", Aragon, Spain, `https://www.benasque.org/2022pde/`:
  - presentation entitled *A Non-local non-linear convection-diffusion problem on the Hyperbolic space* – based on a collaboration with Prof. María del Mar González (Universidad Autónoma de Madrid) Prof. Ioan-Liviu Ignat (Bucharest), Prof. Sergiu Moroianu (Bucharest);
  - presentation entitled *A Non-local non-linear convection-diffusion problem on metric trees.*

8 Summer Schools and Internships

- 13 - 18 July 2025 – "Warsaw Summer School on Evolutionary PDEs", Warsaw, Poland, participant and poster entitled *Concentration limit for convection-diffusion on metric graphs* – based on a collaboration with Prof. Ioan-Liviu Ignat (Bucharest).

- 30 June - 8 July 2025 – "NSF-UEFISCDI Summer School on Fluids", Bucharest, Romania (participant).

- 10 - 18 July 2024 – "9th Regional Summer School on Applied Mathematics", Sinaia, Romania (participant).

- 5 - 13 July 2023 – "8th French-Romanian Summer School on Applied Mathematics", Sinaia, Romania (participant).

- 1 May - 29 June 2023 – Internship at the "Chair for Dynamics, Control, Machine Learning and Numerics - Alexander von Humboldt Professorship" at Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany – founded by the COST Action CA18232 "Mathematical models for interacting dynamics on networks".

- 20 - 24 March 2023 – Spring School "Recent trends in the mathematics of complex materials", Bonn, Germany (participant).

- 6 - 12 July 2022 – "7th French-Romanian Summer School on Applied Mathematics", Sinaia, Romania (participant).

9 Awards

- 2020: *Best Bachelor Thesis Award in Exact Sciences and Engineering* – University of Bucharest Senate Awards.

10 Competitions

- 2018: Coordinator at the *59th International Mathematical Olympiad*, Cluj-Napoca, Romania.

- 2018-2025: Coordinator at *Romanian Master in Mathematics* competition – `http://rmms.lbi.ro/`

- 2011-2017: *National Mathematical Olympiad of Romania* – first prize (2017), honourable mention (2016)

- 2017: *Balkan Mathematical Olympiad* – silver medal