

# Curriculum vitae



## 1 Personal Information

- First name: Dragoș
- Surname: Manea
- Date of birth: 28th November 1998
- Street address: Str. Lunca Bârzești nr.2, bl.21, sc.1, ap.31, București, Romania
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## 2 Education

- 2021-2025: PhD in Mathematics at "Simion Stoilow" Mathematical Institute of the Romanian Academy, Bucharest.  
Title of thesis: *Asymptotic phenomena of diffusion equations* – supervisors: Prof. Ioan-Liviu Ignat and Prof. Cristian-Mihai Cazacu (from University of Bucharest);
- 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 Șaguna* National College, Brașov, 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

- 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*, in "Mathematical Models for Interacting Dynamics on Networks", 2026, Birkhäuser Cham, pp. 275–300, DOI [/10.1007/978-3-032-02326-1\\_9](https://doi.org/10.1007/978-3-032-02326-1_9).
- Timothée Crin-Barat and Dragoș Manea, *Asymptotic-preserving finite difference method for partially dissipative hyperbolic systems*, IMA Journal of Numerical Analysis, 2025, 00, 1–40, DOI [10.1093/imanum/draf066](https://doi.org/10.1093/imanum/draf066).

- María del Mar González, Liviu I. Ignat, Dragoş 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

- Dragoş Manea, *Mesh-free numerical method for Dirichlet eigenpairs of the Laplacian with potential*, preprint 2026, arXiv:2602.12008.
- Mihai Bucataru and Dragoş Manea, *Discrete Laplacians on the hyperbolic space – a compared study*, preprint 2024, submitted, arXiv:2409.01211.

## 7 Conferences and talks

- 7 - 13 September 2025 – “The 8th Najman Conference on Spectral Theory and Differential Equations” at Centre for Advanced Academic Studies (CAAS), Dubrovnik, Croatia, [https://web.math.pmf.unizg.hr/najman\\_conference](https://web.math.pmf.unizg.hr/najman_conference):
  - 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 Piteşti, 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/](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.
- 2018-2026: 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