

Jørgen Endal

Curriculum Vitae

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Personal information

Citizenship Born a Norwegian citizen on December 29, 1989
Civil status Married

Education

2013–2017 PhD in Mathematics. Title: *On degenerate parabolic problems with local and nonlocal diffusion*. Advisor: Prof. Espen R. Jakobsen. Norwegian University of Science and Technology (NTNU), Norway
2008–2013 Master of Science in Mathematics. 5-year Integrated Master's Degree Programme in Applied Physics and Mathematics, NTNU, Norway

Current and previous positions

2020– Marie Skłodowska-Curie postdoctoral fellow. Departamento de Matemáticas, Universidad Autónoma de Madrid (UAM), Spain
2017–2020 Postdoctoral fellow. Department of Mathematical Sciences, NTNU, Norway
2013–2017 PhD in Mathematics. Department of Mathematical Sciences, NTNU, Norway

Project management experience

2020– Pincipal investigator/Project researcher
Marie Skłodowska-Curie Actions–Individual Fellowships project *Novel techniques for quantitative behaviour of convection-diffusion equations (techFRONT)*, grant no. 839749 from the European Union's Horizon 2020 research and innovation programme. Project supervisor: Prof. Matteo Bonforte

Supervision of Ph.D. students

2020– Involved in the supervision of two Ph.D. students at UAM
2017– Involved in the supervision of one Ph.D. student at NTNU

Grants

2020–2022 Top-up financing of outgoing MSCA fellows (MSCA-TOPP-UT) for 24 months starting September 1 2020. Funded by Research Council of Norway. Budget: 230 000 NOK

- 2020–2022 Marie Skłodowska-Curie Actions–Individual Fellowships (H2020-MSCA-IF-2018) for 24 months starting September 1 2020. Funded by European Union’s Horizon 2020 research and innovation programme. Principal Investigator. Budget: 173 000 EUR. Assessment score: 95.60/100.00 (cut off at 92.60)
- 2019 FRINATEK Personal Overseas Research Grant for a 6 months stay in Madrid, Spain. Funded by Research Council of Norway. Budget: 100 000 NOK
- 2016 Fellowship grant for 1.5 months as part of the research programme *Interactions between Partial Differential Equations & Functional Inequalities*. Funded by Institut Mittag-Leffler (IML), Stockholm, Sweden

Awards

- 2018 The Dimitris N. Chorafas Foundation Award. Award for the best PhD thesis at NTNU in the fields of mathematics, engineering sciences, medicine, and natural sciences

Mobility (research stays abroad)

- 2020 Universidad Complutense de Madrid (UCM), Spain. 1 week (invited by Félix del Teso)
- 2019 Université de Tours (UnivTours), France. 1 week (invited by Boris Andreianov)
- 2019 Basque Center for Applied Mathematics (BCAM), Bilbao, Spain. 1.5 weeks (invited by Félix del Teso)
- 2019 Universidad Autónoma de Madrid (UAM), Spain. 6 months (invited by Matteo Bonforte)
- 2018 University of Pittsburgh, US. 1 week (invited by Marta Lewicka)
- 2018 Université de Bourgogne Franche-Comté, Besançon, France. 1.5 weeks (invited by Nathaël Alibaud)
- 2018 Universidad Autónoma de Madrid, Spain. 1 week (invited by Matteo Bonforte)
- 2016 Institut Mittag-Leffler (IML), Stockholm, Sweden. Fellowship grant for 1.5 months as part of the research programme *Interactions between Partial Differential Equations & Functional Inequalities*
- 2016 Université de Bourgogne Franche-Comté, Besançon, France. 5 months (invited by Nathaël Alibaud)
- 2015 École Normale Supérieure, Paris, France. 4 months (invited by Cyril Imbert)

Commissions of trust

- 2019– 5 reviews for *MathSciNet* (2019, 2020)
- 2017– Referee for the journals *SIAM Journal on Numerical Analysis* (2017) and *Nonlinear Analysis TMA* (2019, 2020)

Organisation of scientific meetings

- 2020–2021 Part of the organisational staff of the thematic online trimester *Fifty Years of Kruzhkov Entropy Solutions, and Beyond*, approx. 100 participants
- 2020 Part of the organisational staff of the conference *Abel Symposium 2020*, cancelled due to covid-19
- 2019 Part of the organisational staff of the conference *Norwegian meeting on PDEs*, approx. 50 participants
- 2018 Part of the organisational staff of the workshop *NTNU Workshop on PDEs*, approx. 30 participants

Teaching activities

- 2018, 2020 Calculus 2 (TMA4105), NTNU, lecturer
- 2018, 2019 Calculus 1 (TMA4100), NTNU, lecturer
- 2014, 2015 “Intensive course in high school calculus” (Oppfriskningskurs matematikk), NTNU, lecturer
- 2014, 2015 Calculus 2 (TMA4105), NTNU, teaching assistant (with special responsibility)
- 2013, 2014 Calculus 1 (TMA4100), NTNU, teaching assistant (with special responsibility)
- 2010–2013 Calculus 1 and 3 (TMA4100 and TMA4115), NTNU, teaching assistant

Publications in refereed journals

- [8] F. del Teso, J. Endal, and J. L. Vázquez. The one-phase fractional Stefan problem. To appear in *Mathematical Models and Methods in Applied Sciences*, 2021
- [7] N. Alibaud, F. del Teso, J. Endal, and E. R. Jakobsen. The Liouville theorem and linear operators satisfying the maximum principle. *Journal de Mathématiques Pures et Appliquées*, 142:229–242, 2020
- [6] F. del Teso, J. Endal, and J. L. Vázquez. On the two-phase fractional Stefan problem. *Advanced Nonlinear Studies*, 20(2):437–458, 2020
- [5] F. del Teso, J. Endal, and E. R. Jakobsen. Robust numerical methods for nonlocal (and local) equations of porous medium type. Part I: Theory. *SIAM Journal on Numerical Analysis*, 57(5):2266–2299, 2019
- [4] F. del Teso, J. Endal, and E. R. Jakobsen. Robust numerical methods for nonlocal (and local) equations of porous medium type. Part II: Schemes and experiments. *SIAM Journal on Numerical Analysis*, 56(6):3611–3647, 2018
- [3] F. del Teso, J. Endal, and E. R. Jakobsen. On distributional solutions of local and nonlocal problems of porous medium type. *Comptes Rendus Mathématique*, 355(11):1154–1160, 2017
- [2] F. del Teso, J. Endal, and E. R. Jakobsen. Uniqueness and properties of distributional solutions of nonlocal equations of porous medium type. *Advances in Mathematics*, 305:78–143, 2017

- [1] J. Endal and E. R. Jakobsen. L^1 contraction for bounded (nonintegrable) solutions of degenerate parabolic equations. *SIAM Journal on Mathematical Analysis*, 46(6):3957–3982, 2014

Publications in refereed conference proceedings

- [1] F. del Teso, J. Endal, and E. R. Jakobsen. On the well-posedness of solutions with finite energy for nonlocal equations of porous medium type. In *Non-Linear Partial Differential Equations, Mathematical Physics, and Stochastic Analysis*, EMS Series of Congress Reports, pages 129–168. European Mathematical Society, Zürich, 2018

Preprints

- F. del Teso, J. Endal, and M. Lewicka. On asymptotic expansions for the fractional infinity Laplacian. Preprint, arXiv:2007.15765, 2020
- N. Alibaud, J. Endal, and E. R. Jakobsen. Optimal and dual stability results for L^1 viscosity and L^∞ entropy solutions. Preprint, arXiv:1812.02058, 2018

Citations (on January 14, 2021)

114 citations in *Google Scholar*; 44 citations by 36 authors in *MathSciNet*

Conferences and workshops

- 2020–2021 Fifty Years of Kruzhkov Entropy Solutions, and Beyond, Thematic online trimester. Participant
- 2020 Online Workshop on Nonlocal PDEs, Virtual workshop. Participant
- 2020 Nonlocal Operators and Markov Processes I, Virtual workshop. Participant
- 2020 2020 Fields Medal Symposium, Virtual conference. Participant
- 2020 Intensive week on PDEs, Virtual workshop. Participant
- 2020 2nd IMI one-day workshop on PDEs, Workshop, Madrid, Spain. Invited speaker
- 2020 V Congreso de Jóvenes Investigadores Castelló 2020 (JOVENESRSME 2020), Conference, Castelló, Spain. Session speaker
- 2019 The Mathematics of Finite Elements and Applications 2019 (MAFELAP 2019), Conference, London, UK. Session speaker
- 2019 Norwegian meeting on PDEs, Conference, Trondheim, Norway. Short talk
- 2019 Congreso Biental de la Real Sociedad Matemática Española (RSME 2019), Conference, Santander, Spain. Participant
- 2019 IMI one-day workshop on PDEs, Workshop, Madrid, Spain. Participant
- 2018 NTNU Workshop on PDEs, Workshop, Trondheim, Norway. Short talk
- 2018 UMI-SIMAI-PTM Joint Meeting, Conference, Wrocław, Poland. Session speaker
- 2018 Nonlocal Interactions in Partial Differential Equations and Geometry, Summer School, Institut Mittag-Leffler, Stockholm, Sweden. Short talk
- 2017 The Fractional Laplacian: Probabilistic Structure and Extensions Related to Lévy Processes, Minischool, Bilbao, Spain. Participant

- 2017 International Conference on Elliptic and Parabolic Problems, Conference, Gaeta, Italy. Session speaker
- 2017 Minischool on Recent Trends in PDEs, Minischool, Madrid, Spain. Participant
- 2016 Math Meets Industry, Conference, Trondheim, Norway. Participant
- 2016 Non-linear PDEs, mathematical physics, and stochastic analysis, Conference, Trondheim, Norway. Participant
- 2016 3rd Conference on Nonlocal Operators and Partial Differential Equations, Conference, Bedlewo, Poland. Participant
- 2015 A Nonlocal PDEs Day, Workshop, Madrid, Spain. Short talk
- 2015 5. École de printemps EDP Non-linéaire, Conference, Essaouira, Morocco. Participant
- 2014 Journées d'Analyse Non Linéaire de Besançon, Workshop, Besançon, France. Participant

Scientific talks

- 2020 *The one-phase fractional Stefan problem*, 2nd IMI one-day workshop on PDEs, Workshop, Madrid, Spain
- 2020 *The one-phase fractional Stefan problem*, DNA seminar, NTNU, Trondheim, Norway
- 2020 *Connections between L^1 -solutions of Hamilton-Jacobi-Bellman equations and L^∞ -solutions of convection-diffusion equations*, V Congreso de Jóvenes Investigadores Castelló 2020 (JOVENESRSME 2020), Conference, Castelló, Spain
- 2019 *On nonlocal (and local) equations of porous medium type. Background, analysis, and numerical simulations*, Seminar, UnivTours, Tours, France
- 2019 *Nonlocal (and local) nonlinear diffusion equations. Background, analysis, and numerical approximation*, The Mathematics of Finite Elements and Applications 2019 (MAFELAP 2019), Conference, London, UK
- 2019 *Connections between L^1 -solutions of Hamilton-Jacobi-Bellman equations and L^∞ -solutions of convection-diffusion equations*, Norwegian meeting on PDEs, Conference, Trondheim, Norway
- 2019 *Connections between L^1 -solutions of Hamilton-Jacobi-Bellman equations and L^∞ -solutions of convection-diffusion equations*, Nonlinear Diffusion Seminar, UAM, Madrid, Spain
- 2018 *Numerical solutions of nonlocal (and local) equations of porous medium type*, NTNU Workshop on PDEs, Workshop, Trondheim, Norway
- 2018 *On nonlocal (and local) equations of porous medium type*, Nonlocal Interactions in Partial Differential Equations and Geometry, Summer School, Institut Mittag-Leffler, Stockholm, Sweden
- 2017 *On nonlocal equations of porous medium type*, International Conference on Elliptic and Parabolic Problems, Conference, Gaeta, Italy
- 2017 *On nonlocal equations of porous medium type. Survey of 4 papers*, DNA seminar at NTNU, Trondheim, Norway

- 2016 *Local and nonlocal diffusion (Brownian motion and Lévy flights)*, Informal seminar at IML, Stockholm, Sweden
- 2015 *On the duality between Hamilton-Jacobi-Bellmann and convection-diffusion equations*, A Nonlocal PDEs Day, Workshop, Madrid, Spain
- 2015 *L^1 Contraction for Bounded (Nonintegrable) Solutions of Degenerate Parabolic Equations*, DNA seminar at NTNU, Trondheim, Norway

Expository talks

- 2019 *Nonlocal (and local) nonlinear diffusion equations. Background, analysis, and numerical approximation*, Scientific Seminar, BCAM, Bilbao, Spain
- 2017, -18, -19 *Life as a PhD candidate*, Introduction seminar for PhD candidates at NTNU/IE, Trondheim, Norway
- 2017 *What is a solution of a PDE? Current concepts used in research beyond classical solutions, why are they needed, how are they related*, Trial lecture at Ph.D. defence, Trondheim, Norway
- 2014 *Walking randomly in the realm of partial differential equations and probability theory (The Laplace operator and Brownian motion)*, Student seminar at NTNU, Trondheim, Norway

Other outreach activities

- 2020– Active on Twitter through the account “@msca_techfront”
- 2020– Active on Wikipedia through the account “JorgenEndal”