Martin Cramer Pedersen

CV

Information

Current address: Office Ck1, Niels Bohr International Academy, University of Copenhagen, Blegdamsvej 17, 2100 Copenhagen E, Denmark

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Date of birth: November 7th, 1985

Career

2023– **Assistant professor (Adjunkt)**
Niels Bohr International Academy & Niels Bohr Institute, University of Copenhagen

2019–2023 **Assistant professor (Adjunkt)**
Niels Bohr Institute, University of Copenhagen

2018–2019 **Postdoctoral fellow**
Niels Bohr Institute, University of Copenhagen & Department of Applied Mathematics, Australian National University. Supervisors: Jacob Kirkensgaard, Vanessa Robins, & Kell Mortensen

2017–2018 **Postdoctoral fellow**
Niels Bohr Institute, University of Copenhagen. Supervisor: Lise Arleth

2015–2017 **Postdoctoral fellow**
Department of Applied Mathematics, Australian National University. Supervisor: Stephen Hyde

2014–2015 **Postdoctoral fellow**
Niels Bohr Institute, University of Copenhagen. Supervisor: Lise Arleth

Education

2011–2014 **Ph.D.**
Niels Bohr Institute, University of Copenhagen. Supervisors: Kell Mortensen & Lise Arleth

2007–2009 **M.Sc., Mathematical physics**
Niels Bohr Institute, University of Copenhagen. Thesis supervisor: Charlotte Fløe Kristjansen

2004–2007 **B.Sc., Mathematical physics**
Niels Bohr Institute & Department of Mathematical Sciences, University of Copenhagen. Thesis supervisor: Anders Sørensen

Scientific areas of interest

Applied mathematics: Persistent homology, applied and computational topology, applied and computational geometry, non-euclidean geometry, combinatorial group theory, mathematical crystallography, tiling theory

Physics: Structural soft matter and biophysics, active matter, X-ray and neutron science, scattering physics and theory, small-angle X-ray and neutron scattering, protein structure and morphology

Materials science: Periodic networks and reticular nets, soft matter materials science, molecular dynamics, liquid crystals, model foams, quasicrystals, crystallisation dynamics, nematic and p-atic crystals

Computer science: High-performace computing, general purpose GPU, optimization problems, word automata, visualization methods, data scientific methods, information theory

Grants and funding

2019–2020 **Faculty of Science, University of Copenhagen - approx. €20.000**
Funding for Ph.D.-school and long-term visit by Stephen Hyde with co-applicant Jacob Kirkensgaard

2018 **The Villum Foundation, Villum Experiment Grant - approx. €200.000**
Funding for two years as assistant professor at the Niels Bohr Institute, UCPH

2017 **NVidia Academic GPU Seeding Grant - approx. €2.000**
NVidia GeForce Titan XP GPU

2015 **The Carlsberg Foundation, Internationalisation Fellowship - approx. €50.000**
Co-funding for a second year as postdoctoral fellow at Department of Applied Mathematics, ANU

2015 **The Stjepan Marcelja endowment fund - approx. €10.000**
Co-funding for a second year as postdoctoral fellow at Department of Applied Mathematics, ANU

2014 **The Carlsberg Foundation, Internationalisation Fellowship - approx. €50.000**
Funding for one year as postdoctoral fellow at Department of Applied Mathematics, ANU

Lectures, invitations, and organisation

2022 **Geometry and Topology in Contemporary Materials Science III**
Organiser and lecturer, Ph.D. school at University of Copenhagen, https://indico.nbi.ku.dk/event/1316/

2021 **25th General Assembly and Congress of the International Union of Crystallography**
Invited speaker, Conference in Prague, https://seafile.erda.dk/seafile/f/d865fc32bc/

2020 **Symposium for Kell Mortensen**
Co-organiser, Symposium at University of Copenhagen

2020 **SIAM Conference on Mathematical Aspects of Materials Science: Data and Analysis**
Invited speaker, Conference at Basque Center of Applied Mathematics, Bilbao (Cancelled due to Covid-19)

2019 **AMS Special Session on Crystallographic and Highly Symmetric Patterns**
Invited speaker, Conference at University of Florida, Gainesville

2018 **Hot Topics: Shape and Structure of Materials**
Invited speaker, Conference at Mathematical Sciences Research Institute, University of California, Berkeley

2017 **Geometry and Topology in Contemporary Materials Science II**
Co-organiser and lecturer, Ph.D. school at University of Copenhagen, https://indico.nbi.ku.dk/event/938/

2013 **Third Annual Niels Bohr International Academy Workshop on ESS Science**
Invited speaker, Workshop at University of Copenhagen

Community, appointments, and publishing

2022–2023 **Student Counselling Service**
Scientific support teacher, University of Copenhagen, https://srg.dk

2021– **Mathematical Reviews database/MathSciNet**
Reviewer, American Mathematical Society

2020–2022 **The Lundbeck Foundation Brainstruc Project**
Member of steering committee, University of Copenhagen and Aarhus University, Denmark

2020–2023 **College 8 for Evaluation of Proposals for Neutron Scattering at ILL**
Subcommittee member, Institute Laue-Langevin, Grenoble, France

2018– **Peer reviewer**
Soft Matter, Royal Society of Chemistry
Acta Crystallographica A, International Union of Crystallography
IUCrJ, International Union of Crystallography
ACS Materials Au, American Chemical Society
Journal of Physical Chemistry B, American Chemical Society
Journal of Physical Chemistry C, American Chemical Society

Publication record

ORCID	0000-0002-8982-7615
Citations	576 (Google Scholar)
H-Index	13 (Google Scholar)
Publications	31 (10 first authorships, 2 shared first authorships, 16 corresponding authorships)
Google Scholar	https://scholar.google.com/citations?user=rluIGOAAAAAJ

IT and computer science

Mathematics	Mathematica, Matlab/Octave, GAP, Maple, CGAL, SymPy
Text editing	LaTeX, Microsoft Office
Web	HTML5, CSS3, JavaScript
Languages	Python, C, C++, C#, OpenCL, Bash, Fortran
Graphics	Inkscape, PyMol, Gnuplot, SideFX Houdini, VMD, ImageJ/Fiji, Ovito, Vesta
Development	Subversion, Git, Unity
Simulations	HooMD-blue, Lammps, Quantum Espresso, Phaistos, McStas, McXtrace
Machine learning	Tensorflow, PyTorch, Sci-kit-learn

Languages

Danish	Mothertongue	English	Full proficiency
German	Basic	Korean	Basic (세종 한국어 2B)

References

Prof. Lise Arleth
Niels Bohr Institute
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Prof. Kell Mortensen
Niels Bohr Institute
University of Copenhagen
kell@nbi.ku.dk

Prof. Stephen T. Hyde
School of Chemistry
University of Sydney
stephen.hyde@sydney.edu.au

Assoc. Prof. Vanessa Robins
Research School of Physics
Australian National University
vanessa.robins@anu.edu.au

Assoc. Prof. Jacob J. K. Kirkensgaard
Niels Bohr Institute & Department of Food Science
University of Copenhagen
jjkk@nbi.ku.dk