

Doc. RNDr. Kateřina Helisová, Ph.D. - Curriculum Vitae

Personal

Date and place of birth: 12th February 1981, Vsetín, Czech Republic
Affiliation: Czech Technical University in Prague, Faculty of Electrical Engineering,
Department of Mathematics
Address: Jugoslávských partyzánů 3, 166 27 Prague 6, Czech Republic
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Qualification

1999 - 2005 Master study at Charles University, Faculty of Mathematics and Physics; study branch: Financial and Insurance Mathematics
June 3, 2005 Defence of MSc thesis "Metody analýzy úvěrového rizika individuálních klientů" [In Czech]; supervisor: RNDr. Jitka Zichová, Dr.
2005 - 2009 PhD study at Charles University, Faculty of Mathematics and Physics; study branch: Probability and Mathematical Statistics
September 11, 2009 Defence of PhD thesis "Models for Random Union of Interacting Discs"; supervisor: Prof. RNDr. Viktor Beneš, DrSc.
November 8, 2017 Habilitation in Applied mathematics at Czech Technical University in Prague, Faculty of Electrical Engineering

Employment history

March 2008 - November 2017 Assistant professor at Czech Technical University in Prague, Faculty of Electrical Engineering, Department of Mathematics
since December 2017 Associate professor at Czech Technical University in Prague, Faculty of Electrical Engineering, Department of Mathematics

Abroad research stays (longer than 1 month)

September - November 2006 PhD research stay at Aalborg University (Denmark)
March - September 2015 Post-doctoral research stay at University of Split (Croatia)

Research

- 20 publications and 119 citations (71 without self-citation) in WoS, h-index 5
- Grants (solver or co-solver):
 - Klebanov L., Helisová K., Mrkvička T.: New approaches to modeling and statistics of random sets; project of the Czech Science Foundation (GA ČR) No. 19-04412S, 2019 - 2021
 - Helisová K.: Stochastic modelling and statistical analysis of random sets; project of the Czech Science Foundation (GA ČR) No. 13-05466P, 2013 - 2015
- International collaboration:
 - prof. Jesper Møller, University of Aalborg (Denmark),
 - prof. David Dereudre, University of Lille (France),
 - prof. Johan Debayle, Institute MINES Saint-Etienne (France),
 - associate prof. Frederic Lavancier, University of Nantes (France),
 - Dr. Ivo Ugrina, University of Split / University of Zagreb (Croatia),
 - Dr. Vesna Gotovac Đogaš, University of Split (Croatia)
- Current research interest: stochastic geometry and spatial statistics with focus on planar random sets

Teaching and supervising

- Lectures and exercises of Probability and Statistics and (both in Czech and English) Mathematics for Economy (both in Czech and English) for bachelor students,
- lectures of Point Processes, Random Sets and Selected Topics from Probability and Statistics for PhD students,
- supervisor or co-supervisor of 5 PhD students (one of them currently studying),
- supervisor of 5 diploma theses and 5 bachelor theses.

Activities in the last five years

Important publications

- Gotovac Ďogaš V., Helisová K., Klebanov L.B., Staněk J., and Volchenkova I.V. (2023): A new definition of random set. *Glasnik matematički* **58**, 135–154..
- Minaříková M., Fík Z., Štorm J., Helisová K., Ferrová K., and Mahelková G. (2022): Tear matrix metalloproteinase-9 levels may help to follow a ocular surface injury in lagophthalmic eyes. *Plos One* **17**, article number: e0274173, DOI: 10.1371/journal.pone.0274173.
- Debayle J., Gotovac Ďogaš V., Helisová K., and Staněk J. (2021): Methods for assessing similarity of random sets. *Proceedings of ISIVC'2020: The 10th International Symposium on Signal, Image, Video and Communications*, 1–6, DOI: 10.1109/ISIVC49222.2021.9487547.
- Debayle J., Gotovac Ďogaš V., Helisová K., Staněk J., and Zikmundová M. (2021): Assessing similarity of random sets via skeletons. *Methodology and Computing in Applied Probability* **23**, 471–490.
- Gotovac Ďogaš V. and Helisová K. (2021): Testing equality of distributions of random convex compact sets via theory of N-distances. *Methodology and Computing in Applied Probability*, **23**, 503–526.
- Gotovac Ďogaš V., Helisová K., Radović B., Staněk J., Zikmundová M., and Brejchová K. (2021): Two-step method for assessing similarity of random sets. *Image Analysis and Stereology* **40**, 127–140.

Other service to community

- The main organiser of the international workshops "Stochastika 2024" (Kohútka, February 4 - 9, 2024) and "Stochastika 2021" (Kohútka, February 6 - 11, 2022),
- member of the organising committee of the international conference "14th European Congress for Stereology and Image Analysis" (Prague, September 15 - 18, 2025),
- member of the Executive Committee of The Czech Mathematical Society (2018 - 2022),
- member of the Executive Committee of The Czech Statistical Society (2021 - present),
- member of the Scientific Council of Faculty of Chemical Engineering, University of Chemistry and Technology, Prague (2023 - present),
- member of the Board of the PhD Program "Measurement and Signal Processing in Chemistry" at Faculty of Chemical Engineering, University of Chemistry and Technology, Prague (2020 - present).