

Jakub Staněk - curriculum vitae

Personal

Date and place of birth: 27th April 1980, Liberec, Czech Republic
Address: Českodubská 784, Prague 9 - Vinoř, Czech Republic
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Education

1995 - 1999 Secondary Technical School in Liberec
1999 - 2005 Charles University, Faculty of Mathematics and Physics, study branch: Probability, mathematical statistics and econometrics - master study
30th May, 2005 Defense of master thesis "The Stochastic Differential Equation $dX(t) = bX(t)dt + X(t)dW(t)$ and Financial Mathematics" (supervisor: prof. RNDr. Josef Štěpán, DrSc.)
2005 - 2009 Charles University, Faculty of Mathematics and Physics, study branch: Probability and mathematical statistics - PhD study
11th September, 2009 Defense of PhD thesis "Deterministic and Stochastic Epidemic Models" (supervisor: prof. RNDr. Josef Štěpán, DrSc.)

Working experience

March 2009 - December 2010 Assistant professor at Czech Technical University in Prague, Faculty of Mechanical Engineering
January 2011 - present Assistant professor at Charles University, Faculty of Mathematics and Physics

Research projects

May 2006 - December 2008 Member of team in the project GAČR 201-05-H007 "Statistical dynamical models and their applications in economical, natural and technical sciences"
January 2007 - December 2007 Investigator of the project GAUK 56707 "Numerical solution to stochastic epidemic models with vaccination"
January 2011 - December 2014 Member of team in the project GAČR 201-10-0472 "Stochastic geometry - inhomogeneity, marking, dynamics and stereology"
January 2014 - December 2015 Member of team in the German-Czech project MŠMT 7AMB14DE006 "Mathematical analysis, modeling and simulation of random phenomena observed in complex spatial regions, with emphasis on random marked sets"
January 2017 - December 2019 Member of team in the German-Czech project GAČR 17-00393J "Parametric representation and stochastic 3D modeling of grain microstructures in polycrystalline materials using random marked tessellations"
January 2019 - December 2021 Member of team in the project GAČR 19-04412S "New approaches to modeling and statistics of random sets"

Teaching

- Charles University, Faculty of Mathematics and Physics:
 - 2010 - present Mathematical analysis - both lectures and exercises
 - 2010 - 2011 Advanced probability for mathematicians - lectures
 - 2006 - 2009, 2013 - present Probability and statistics - exercises
- Czech Technical University in Prague, Faculty of Mechanical Engineering:
 - 2008 - 2010 Probability and statistics - both lectures and exercises
 - 2008 - 2010 Mathematical analysis - exercises

Language knowledge

English

Stays abroad

November 2007	Technical University of Munich, Germany (1 week)
July 2014, September 2015 and June 2017	Ulm University, Germany (3 × 2 weeks)
September 2019, June–September 2020	University of Split, Croatia (4 × 1-2 weeks)
June 12 - September 6, 2021	University of Split, Croatia

Participation at international conferences, workshops and seminars

- Invited talks:

August 25-28, 2015	The 4th Stochastic Geometry Days, Poitiers, France
May 25-27, 2016	The 11th French-Danish Workshop on Spatial Statistics and Image Analysis in Biology, Rennes, France
June 18, 2021	Split Mathematical Society's colloquium, Split

- Talks:

August 6-10, 2007	Stochastic Processes and their Applications, Urbana-Champaign, Illinois, USA
July 7-10, 2008	International Workshop in Applied Probability, Compiègne, France
February 8-13, 2015	Stochastika 2015, Kohútka, Czech Republic
February 5-10, 2017	Stochastika 2017, Kohútka, Czech Republic
September 24-28, 2017	Workshop of the project GAČR 17-00393J, Hirschegg, Austria
May 27-31, 2018	Workshop of the project GAČR 17-00393J, Rybník, Czech Republic
February 3-8, 2019	Stochastika 2019, Kohútka, Czech Republic
February 24-28, 2019	Workshop of the project GAČR 17-00393J, Sněžné - Milovy, Czech Republic
May 27-31, 2019	The 15th International Congress for Stereology and Image Analysis, Aarhus, Denmark
September 22-26, 2019	Workshop of the project GAČR 17-00393J, Hirschegg, Austria
April 7-9, 2021	The 10th International Symposium on Signal, Image, Video and Communications 2020, France (online)
June 28-30, 2021	13th European Congress for Stereology and Image Analysis, France (online)
February 6-11, 2022	Stochastika 2022, Kohútka, Czech Republic

- Posters:

June 25-28, 2012	Stereology, Spatial Statistics and Stochastic Geometry, Prague, Czech Republic
May 26-31, 2013	Summer School on Topics in Space-Time Modeling and Inference, Aalborg, Denmark
June 18-22, 2018	International Workshop in Honor of Dominique Jeulin, Peninsula of Oléron, France
June 2-7, 2019	The 20th Workshop on Stochastic Geometry, Stereology and Image Analysis, Sandbjerg Estate, Denmark

Organisation of international conferences and workshops

February 8-13, 2015	Stochastika 2015, Kohútka, Czech Republic
February 5-10, 2017	Stochastika 2017, Kohútka, Czech Republic
June 25-28, 2018	Stereology, Spatial Statistics and Stochastic Geometry, Prague, Czech Republic
February 3-8, 2019	Stochastika 2019, Kohútka, Czech Republic
February 6-11, 2022	Stochastika 2021, Kohútka, Czech Republic

List of publications

- Chapter in a book

Beneš V., Staněk J., Kratochvílová B., Šedivý O. (2015): *Random Marked Sets and Dimension Reduction. Chapter 6 in Stochastic Geometry, Spatial Statistics and Random Fields - Models and Algorithms*. Lecture Notes in Mathematics. Ed. Schmidt V., 171–203, Springer Verlag.

- Papers in journals

1. Gotovac V., Helisová K., Radović B., Staněk J., Brejchová K., Zikmundová M. (2021): *Two-step method for assessing similarity of random sets*. Image Analysis and Stereology, **40** (3), 127–140.
2. Debayle J., Gotovac V., Helisová K., Staněk J., Zikmundová M. (2021): *Assessing similarity of random sets via skeletons*. Methodology and Computing in Applied Probability **23**, 471–490.
3. Seitzl F., Petrich L., Krill C., Schmidt V., Staněk J., Beneš V. (2021): *Exploration of Gibbs-Laguerre tessellations for three-dimensional stochastic modeling*. Methodology and Computing in Applied Probability **23**, 669–693.
4. Helisová K., Staněk J. (2020): *Rozlišování realizací náhodných množin*. Informační bulletin České statistické společnosti **31** (4), 3–23. [In Czech]
5. Kopeček J., Staněk J., Habr S., Seitzl F., Petrich L., Schmidt V., Beneš V. (2020): *Analysis of the polycrystalline microstructure of AlMgSc alloy observed by 3D EBSD*. Image Analysis and Stereology **39** (1), 1–11.
6. Staněk J., Kopeček J., Král P., Karafiátová I., Seitzl F., Beneš V. (2020): *Comparison of segmentation of 2D and 3D EBSD measurements in polycrystalline materials*. Kovové materiály - Metallic Materials **58**, 301–319.
7. Staněk J. (2020): *Úlohy diskrétní pravděpodobnosti*. Matematika-fyzika-informatika **29** (1), 7–17. [In Czech]
8. Král P., Staněk J., Kunčická L., Seitzl F., Petrich L., Schmidt V., Beneš V., Sklenička V. (2019): *Microstructure changes in HPT-processed copper occurring at room temperature*. Materials Characterization **151**, 602–611.
9. Neumann M., Hirsch Ch., Staněk J., Beneš V., Schmidt V. (2019): *Estimation of geodesic tortuosity and constrictivity in stationary random closed sets*. Scandinavian Journal of Statistics **46** (3), 848–884.
10. Petrich L., Staněk J., Wang M., Westhoff D., Heller L., Šittner P., Krill C. E., Beneš V., Schmidt V. (2019): *Reconstruction of the grains in polycrystalline materials from incomplete data using Laguerre tessellations*. Microscopy and Microanalysis **25** (3), 734–752.
11. Pidnebesna A., Helisová K., Staněk J. (2018): *Statistical Analysis Dependencies between Special Submissions to Municipalities in the Czech Republic*. Informační bulletin České statistické společnosti **29** (3), 1–19.
12. Helisová K., Staněk J. (2016): *Quermass-interaction process with convex compact grains*. Applications of Mathematics **61** (4), 463–487.
13. Neumann M., Staněk J., Pecho M.O., Holzer L., Beneš V., Schmidt V. (2016): *Stochastic 3D modeling of complex three-phase microstructures in SOFC-electrodes with completely connected phases*. Computational Materials Science **118**, 353–364.
14. Helisová K., Staněk J. (2015): *Metoda hlavních komponent aplikovaná na rozšířený Quermass-interakční proces*. Informační bulletin České statistické společnosti **26** (1-2), 28–38. [In Czech]
15. Staňková Helisová K., Staněk, J. (2014): *Dimension reduction in extended Quermass-interaction process*. Methodology and Computing in Applied Probability **16** (2), 355–386.
16. Staněk J., Šedivý O., Beneš V. (2014): *On random marked sets with a smaller integer dimension*. Methodology and Computing in Applied Probability **16** (2), 397–410.
17. Šedivý O., Staněk J., Kratochvílová B., Beneš V. (2013): *Sliced inverse regression and independence in random marked sets with covariates*. Advances in Applied Probability **45** (3), 626–644.
18. Staněk J., Štěpán J. (2010): *Diffusion with an reflecting and absorbing level set boundary - A Simulation study*. Acta Universitatis Carolinae **51**, 73–86.
19. Staněk J., Štěpán J. (2010): *Difúze v omezené oblasti*. Informační bulletin České statistické společnosti **22** (3), 103–108. [In Czech]
20. Štěpán J., Staněk J. (2009): *Absorption in Stochastic Epidemics*. Kybernetika **45**, 458–474.
21. Staněk J. (2008): *Kermack-McKendrick Epidemics Vaccinated*. Kybernetika **44**, 705–714.

- Reviewed contributions in proceedings

1. Debayle J., Gotovac V., Helisová K., Staněk J. (2021): *Methods for assessing similarity of random sets*. 2020 10th International Symposium on Signal, Image, Video and Communications (ISIVC), 1–6, doi: 10.1109/ISIVC49222.2021.9487547.
2. Staněk J. (2016): *Úlohy diskrétní pravděpodobnosti*. Proceedings of the Conference Cesty k matematice II. Matfyzpress, Praha, 111–116. [In Czech]
3. Staněk J. (2014): *Náhoda kolem nás*. Proceedings of the Conference Cesty k matematice. Matfyzpress, Praha, 147–152. [In Czech]
4. Staněk J. (2012): *Pravděpodobnost a hry*. Proceedings of the Conference Matematika a reálný svět. Matfyzpress, Praha, 70–75. [In Czech]
5. Staněk J. (2009): *Stochastický model vývoje epidemie s vakcinací*. ROBUST 2008 (eds. Antoch J., Dohnal G.), Proceedings of the Summer School ROBUST 2008, JČMF, Prague, 393–398. [In Czech]
6. Staněk J. (2006): *Stochastická verze klasického modelu vývoje epidemie*. ROBUST 2006 (eds. Antoch J., Dohnal G.), Proceedings of the Winter School ROBUST 2006, JČMF, Prague, 297–303. [In Czech]
7. Staněk J. (2006): *Stochastic Epidemic models*. WDS'06 (eds. Šafránková J., Pavlů J.), Proceedings of the Conference WDS'06, Matfyzpress, Prague, 82–87.