

Ing. František Štampach, Ph.D. (*June 7, 1985)

CONTACT INFORMATION

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RESEARCH INTERESTS

Mathematical methods in quantum physics, spectral analysis of linear operators (Schrödinger, Jacobi, Hankel, Toeplitz, etc.), orthogonal polynomials, moment problem, special functions, continued fractions.

EDUCATION

Czech Technical University in Prague, Czech Republic

Ph.D., Faculty of Nuclear Sciences and Physical Engineering, September 2014

- Thesis Topic: *Spectral Analysis of Jacobi Matrices and Related Problems*
- Supervisor: Prof. Ing. Pavel Štoviček, DrSc.

Master's Degree, Faculty of Nuclear Sciences and Physical Engineering, June 2010

- Graduated with honors
- Thesis Topic: *Spectral Problem of Jacobi Matrices of a Certain Type*

Bachelor's Degree, Faculty of Nuclear Sciences and Physical Engineering, August 2008

POSITIONS

- **November 2015 - now:** Postdoc at Department of Mathematics, Stockholm University
- **September 2015 - October 2015:** Postdoc at Mathematisches Institut, Universität Bern
- **September 2012 - August 2015:** Assistant Professor at the Faculty of Information Technology, CTU in Prague

JOURNAL PUBLICATIONS

Spectral analysis of non-self-adjoint Jacobi operator associated with Jacobian elliptic functions, joint with P. Siegl, to appear in Oper. Matrices (2017).

Factorization of the characteristic function of a Jacobi matrix, joint with P. Štoviček, Oper. Matrices 11 (2017) 147–169.

On extremal properties of Jacobian elliptic functions with complex modulus, joint with P. Siegl, Math. Anal. Appl. 442 (2016) 627–641.

Nevanlinna extremal measures for polynomials related to q^{-1} -Fibonacci polynomials, Adv. Appl. Math. 78 (2016) 56–75.

The Nevanlinna parametrization for q -Lommel polynomials in the indeterminate case, joint with P. Štoviček, J. Approx. Theor. 201 (2016) 48–72.

Special functions and spectrum of Jacobi matrices, joint with P. Štoviček, Linear Alg. Appl. 464 (2015) 38–61.

The Hahn-Exton q -Bessel function as the characteristic function of a Jacobi matrix, joint with P. Štoviček, Spec. Matrices 2 (2014) 131–147.

Orthogonal polynomials associated with Coulomb wave functions, joint with P. Štoviček, J. Math. Anal. Appl. 419 (2014) 231–254.

The characteristic function for Jacobi matrices with applications, joint with P. Šťovíček, Linear Alg. Appl. 438 (2013) 4130–4155.

On the eigenvalue problem for a particular class of finite Jacobi matrices, joint with P. Šťovíček, Linear Alg. Appl. 434 (2011) 1336–1353.

PRIZES AND
COMPETITIONS

- Honorable mention to the doctoral thesis by the Václav Votruba prize committee.
- Josef Hlávka Award for excellent students and graduates of Czech public universities and young talented academics of the Academy of Sciences of the Czech Republic.

GRANTS

- Spectral Analysis of Operators and its Applications in Quantum Mechanics, grant No. GA13-11058S of the Czech Science Foundation (team member).

SELECTED
CONFERENCES

- *Operator Theory, Analysis and Mathematical Physics*, Saint Petersburg, Russia, August 2016
- *Conference on Mathematics and Applications*, Kuwait City, Kuwait, November 2014
- *Operator Theory, Analysis and Mathematical Physics*, Stockholm, Sweden, July 2014
- *An International Symposium on Orthogonality, Quadrature and Related Topics*, Puerto de la Cruz, Spain, January 2014
- *International Workshop on Operator Theory and its Applications*, Bangalore, India, December 2013
- *Formal and Analytic Solutions of Differential, Difference and Discrete Equations*, Bedlewo, Poland, August 2013
- *The 6th Pacific RIM Conference on Mathematics*, Sapporo, Japan, July 2013
- *Operator Theory, Analysis and Mathematical Physics Conference*, Barcelona, Spain, June 2012
- *International Workshop on Operator Theory and its Applications*, Sevilla, Spain, July 2011
- *Quantum Physics with Non-Hermitian operators*, Dresden, Germany, June 2011
- *Mathematical Methods in Quantum Mechanics*, Bressanone, Italy, February 2011
- *Quantum Dynamics, International Conference in Honor of Pierre Duclos*, Marseille, France, November 2010
- *QMath11 Mathematical Results in Quantum Physics*, Hradec Králové, Czech Republic, September 2010

TEACHING
EXPERIENCE

Lecture:

- Linear Algebra
- Selected Mathematical Methods

Exercises:

- Advanced Real Analysis
- Equations in Mathematical Physics
- Quantum Physics
- Calculus 1-4
- Linear Algebra
- Introduction to Algebra and Number Theory
- Probability and Statistics

LANGUAGES

English - Advanced
Spanish - Intermediate
German - Beginner
Swedish - Beginner

HOBBIES

Music, Literature, Cycling, Skiing, Climbing, Hiking & Tourism