Jan Ševčík

Doctoral Student

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1 August 1996

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Research

Synchronization in dynamical systems from the bifurcation theory point of view in collaboration with Dr. Lenka Přibylová and Dr. Veronika Eclerová. We are interested in studying the emergence of very high-frequency and ultra-fast oscillations in EEG signals of patients with focal epilepsy.

Skills

analytical thinking

MATLAB

statistics and data analysis

visualization

R language

Python

SQL

programming

(*)[The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).]

Education

2021–now — Doctoral studies in Mathematics — Masaryk University
Probability, Statistics and Mathematical Modeling
supervisor doc. RNDr. Lenka Přibylová, Ph.D.

2019–2021 — Master of Science in Applied Mathematics — Masaryk University
Modeling and Computations
passed with honours

2016–2019 — Bachelor of Science in Mathematics — Masaryk University
Modeling and Computations

Employment

2023–now — Researcher I, Department of Mathematics and Statistics, Faculty of Science, Masaryk University

Awards

2021 — Award of the Head of the Department of Mathematics and Statistics

Teaching

Faculty of Science: Probability and statistics I, II (seminar tutor), Applied statistics – exercise (seminar tutor)

Faculty of Informatics: Statistics I (seminar tutor)

Internship

- 2021, November: two-week internship, University of Twente, Netherlands, supervisor: Prof. Hil Meijer

Activities coordination and science popularization

- Researchers' Night 2022 (assisting coordinator)
- Science Festival 2022 (assisting coordinator)
- Open Day Masaryk University 2021 (assisting coordinator)

Publications

PŘIBYLOVÁ, Lenka, Jan ŠEVČÍK, Veronika ECLEROVÁ, Petr KLIMEŠ, Milan BRÁZDIL and Hil MEIJER. Weak coupling of neurons enables very high-frequency and ultra-fast oscillations through the interplay of synchronized phase shifts. *Network Neuroscience*. MIT Press, 2024, vol. 8, No 1, p. 293-318. ISSN 2472-1751. Available from: https://dx.doi.org/10.1162/netn_a_00351.

ŠEVČÍK, Jan and Lenka PŘIBYLOVÁ. Forced van der Pol Oscillator—Synchronization from the Bifurcation Theory Point of View. In Skiadas, C.H., Dimotikalis, Y. *The 14th CHAOS 2021 International Conference*. Cham: Springer, 2022. p. 411–420. ISBN 978-3-030-96963-9. doi:10.1007/978-3-030-96964-6_29.

PŘIBYLOVÁ, Lenka, Jan ŠEVČÍK and Pavel MORCINEK. Modeling Scenario 1-124-S-WorldPopulation. In *SIMIODE Modeling Scenarios*. New York: Brian Winkel, 2020. 4in SIMIODE.

Interests

Sports and reading.