Antonín Češík

Curriculum Vitae

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EDUCATION

Charles University, Faculty of Mathematics and Physics, Prague　　　2020 – 2024
PhD studies in Mathematical Analysis
Topic: *Variational strategies in material sciences: Analysis & Numerics*
Supervisor: Sebastian Schwarzacher

Charles University, Faculty of Mathematics and Physics, Prague　　　2017 – 2019
Master's degree in Mathematical Analysis
Thesis: *Convex hull properties for parabolic systems of partial differential equations*
Supervisor: Sebastian Schwarzacher

University of Oulu, Finland　　　2016
Erasmus exchange student

Charles University, Faculty of Mathematics and Physics, Prague　　　2014 – 2017
Bachelor's degree in General Mathematics, passed with honors
Thesis: *Topological entropy*
Supervisor: Benjamin Vejnar

ACADEMIC EXPERIENCE

ERC-CZ Grant LL2105 CONTACT, http://fsi.karlin.mff.cuni.cz/　　　2022 – 2024
Centre of analysis and numerics for fluid-structure interactions at Charles University
Member of the research team (principal investigator Sebastian Schwarzacher)

GAUK (Charles University Grant Agency) project no. 393421　　　2021 – 2023
Approximability and uniqueness questions for fluid–solid interactions in full dimension
Principal investigator

Project GAČR 23-04766S　　　2023 – 2024
Variational approaches to dynamical problems in continuum mechanics
Member of the research team (principal investigator Martin Kružík)

UNCE SCI/023 and UNCE/24/SCI/005　　　2023–2024
University center for mathematical modelling, applied analysis and computational mathematics
Scholarship recipient

Projects PRIMUS/19/SCI/01 (PRIMUS) and GJ19-11707Y (GAČR)　　　2020 – 2021
Member of the research team (principal investigator Sebastian Schwarzacher)

PUBLICATIONS

[1] Antonín Češík, Giovanni Gravina, and Malte Kampschulte. Inertial evolution of non-linear viscoelastic solids in the face of (self-)collision. *Calculus of Variations and Partial Differential Equations*, 63(2):55, February 2024.

[2] Antonín Češík and Sebastian Schwarzacher. Stability and convergence of in time approximations of hyperbolic elastodynamics via stepwise minimization. *Journal of Differential Equations*, 415:434–486, January 2025.

[3] Antonín Češík, Giovanni Gravina, and Malte Kampschulte. Inertial (self-)collisions of viscoelastic solids with Lipschitz boundaries. *Advances in Calculus of Variations*, 2024. (to appear).

[4] Antonín Češík. Convex hull property for elliptic and parabolic systems of PDE. *Nonlinear Analysis*, 245:113554, August 2024.

SELECTED RESEARCH PRESENTATIONS

94th GAMM Annual Meeting, Magdeburg 2024
Contributed talk: *Inertial evolution of non-linear viscoelastic solids in the face of (self-)collision*

GeoCa 23 workshop on Geometric Analysis and Calculus of Variations, Lysečiny 2023
Invited talk: *Inertial (Self-)Collisions of Viscoelastic Solids with Lipschitz Boundaries*

Marvellous Event on Geometric Analysis, Bedlewo 2023
Contributed poster: *Dynamics and (self-)collisions of inertial solids with Lipschitz boundaries*

The PDEs and Applications seminar, Uppsala University 2023
Seminar talk: *Inertial evolution of non-linear viscoelastic solids in the face of (self-)collision*

Nečas PDE seminar, Mathematical Institute of the Czech Academy of Sciences 2023
Seminar talk: *Inertial evolution of non-linear viscoelastic solids in the face of (self-)collision*

ApplMath22, Brijuni, Croatia 2022
Contributed poster: *Hard collisions of elastic bodies*

Workshop "Analysis of Fluid and Elastic Bodies Interactions", Regensburg 2022
Contributed talk: *Energy estimates in a variational approach to hyperbolic evolutions*

Nonlinear Elliptic and Parabolic Partial Differential Equations at Levico Terme 2021
Invited talk: *Convex hull properties for parabolic systems of partial differential equations*

TEACHING EXPERIENCE

Charles University, Faculty of Mathematics and Physics, Prague

Opponent of a Bachelor thesis *(Steady fluids in exterior domains)* 2021
Teaching Assistant:
– *Partial differential equations 1* (grading homeworks, exercises) 2021 – 2022
– *Mathematical analysis 1, 2, 3, 4* exercise classes (6 semesters total) 2017 – 2021
Official student tutor at Department of Mathematical Analysis 2018 – 2023