

Václav Mácha, Curriculum Vitae
born in 1983, email: macha@math.cas.cz

Current occupation

- Researcher, Institute of Mathematics, Czech Academy of Sciences, since 2019

Previous occupations

- January 2017 – December 2018 Postdoc, Institute of Mathematics, Czech Academy of Sciences
- January 2016 – December 2016 Postdoc, CMAC, Yonsei university in Seoul, Republic of Korea
- December 2012 – December 2015 Postdoc, Institute of Mathematics, Czech Academy of Sciences

Education

- 2008 – 2012 PhD student, Faculty of Mathematics and Physics, Charles University, Prague, research theme: *Qualitative Properties of Solution to Some Types of Equations Describing Flow of Fluids*
- 2006 – 2008 graduate student, Faculty of Mathematics and Physics, Charles University, Prague, specialization Mathematical analysis, diploma thesis: *Use of Fredholms theorems to proof existence of solution of Stokes-type equation*
- 2003 – 2006 undergraduate student, Faculty of Mathematics and Physics Charles University, Prague

Scientific stays

- February 2019, IMPAN Warsaw, Poland (2 weeks);
- September 2018, Tokyo Institute of Technology, Japan (1 week);
- April 2018, Imperial College London, UK (1 week);
- September 2017, Imperial College London, UK (1 week);
- June 2017, Tokyo Institute of Technology, Japan (1 week);
- February 2016, Tokyo Institute of Technology, Japan (1 week);
- March – April 2015, University of Pittsburgh, USA (2 month)

Awards

- 2018 Award of Czech Mathematical Society

Grants

- 2018 – 2020 Czech Science Foundation, project GA18-05974S *Oscillations and concentrations versus stability in the equations of mathematical fluid dynamics*, team member
- 2017 – 2019 Czech Science Foundation, project GJ17-01694 *Mathematical analysis of partial differential equations describing inviscid flows*, team member
- 2017 – 2019 Czech Science Foundation, project GA17-01747S *Theory and numerical analysis of coupled problems in fluid dynamics*, team member
- 2017 – 2018 Ministry of Education, Youth and Sports, project 7AMB16PL060 *Flow of viscous fluid in time dependent domain*, team member
- 2016 – 2018 Czech Science Foundation, project GA16-03230S *Thermodynamically consistent models for fluid flows: mathematical theory and numerical solution*, team member
- 2013 – 2016 Czech Science Foundation, project GA13-00522S *Qualitative analysis and numerical solution of problems of flows in generally time-dependent domains with various boundary conditions*, team member
- 2011 – 2013 Czech Science Foundation, project P201/11/1304 *Flow of fluids in domains with variable geometry*, team member
- 2009 – 2013 Czech Science Foundation, project 201/09/0917 *Mathematical and computer analysis of the evolution processes in nonlinear viscoelastic fluid-like materials*, team member

Others

- Reviewer for Mathematical Reviews
- Organizer of an international conference *Minisymposium on the Navier-Stokes equations*, Prague, 12th–16th February 2018
- Popular science talks at *Open Houses in the Institute of Mathematics CAS*, November 2018 and at *Spring Open Houses in the Institute of Mathematics CAS*, June 2017

Scientific interests

- PDE, qualitative properties of solutions, fluid mechanic, fluid-structure interaction

Presentations

- AIMS 2018, Taipei, Taiwan, July 2018, short talk: *On the motion of a body with a cavity filled with compressible fluid*
- Regularity theory for elliptic and parabolic systems and problems in continuum mechanics 2018, Telč, Czechia, May 2018, short talk: *Global BMO estimates for non-Newtonian fluids with perfect slip boundary conditions*
- Conference of Czech Mathematical Society, Prague, Czechia, February 2018, talk: *Regularity of Stokesova problému*

- The 2nd meeting of young researchers in PDEs, South Korea, July 2017, short talk: *Motion of a piston in a 1D domain filled by a heat-conducting compressible fluid*
- ESSAM, Kácov, Czechia, May 2017, short talk: *Hölder continuity of velocity gradients for shear-thinning fluids*
- Vorticity, Rotation and Symmetry (IV), Luminy, France, May 2017, poster: *Inviscid limit for models of collective behavior*
- First Chinese Czech Conference on Mathematical Fluid Mechanics, Beijing, China, September 2016, short talk: *Regularity of solutions to a generalized Stokes problem*
- EVEQ 2016, Prague, Czechia, July 2016, poster: *Dimension reduction for the full Navier-Stokes-Fourier system*
- KSIAM conference, Daejeon, South Korea, May 2016, short talk: *Regularity of solutions to generalized Stokes problem*
- Particles in Flows, Prague, Czechia, August 2014, short talk: *Self-propelled motion in a viscous compressible fluid*
- 10th AIMS conference, Madrid, Spain, July 2014, short talk: *Self-propelled motion in a viscous compressible fluid*
- COPDE, Novacella, Italy, May 2014, short talk: *Higher integrability of generalized Stokes system under perfect slip boundary conditions*
- Mathematical Theory in Fluid Mechanics, Kácov, Czechia, May 2013, short talk: *Higher integrability of generalized Stokes system under perfect slip*
- Mathematical Fluid Dynamics, Levico Terme, Italy, December 2012, short talk: *Partial regularity of solution to the Navier-Stokes system with a pressure dependent viscosity*
- EVEQ, Prague, July 2012, poster: *Partial Hölder regularity of steady flows in bounded domains*
- Equadiff 12, Loughborough, United Kingdom, August 2011, poster: *Partial Hölder regularity of steady flows in bounded domains*
- Mathematical Theory in Fluid Mechanics, Kácov, Czechia, May 2011, short talk: *Partial regularity of steady flows up to the boundary*
- International Summer School in Mathematical Fluid Dynamics, Levico Terme, Italy, June 2011, short talk: *Generalized Stokes problem*
- Equadiff 11, Brno, Czechia, August 2009, poster: *Regularity to generalized Stokes problem*
- WDS'09, Prague, Czechia, June 2009, short talk: *Regularity of solution to generalized Stokes problem*

Teaching

- 2017 – nowadays Applied Math, basic course, Czech Technical University in Prague
- 2013 – 2015 Math, practicals, Faculty of Information Technology, Czech Technical University in Prague
- 2011 – 2012 Math, practicals, Faculty of Mathematics and Physics, Charles University in Prague
- 2011 – 2012 Math, practicals, Technical University of Liberec
- 2009 – 2011 Math, practicals, Faculty of Social Sciences, Charles University in Prague
- 2008 – 2009 Math, High School Educanet, Kladno
- 2007 – 2009 Mathematical Analysis, practicals, Faculty of Mathematics and Physics, Charles University in Prague

Language skills

- czech – mother tongue
- english – advanced
- german – elementary