

MARTIN MICHÁLEK

DATE OF BIRTH 26 August 1988
PLACE OF BIRTH Hradec Králové, Czech Republic
TITLE Mgr. (Master degree)

COMPLETED EDUCATION

PERIOD 2004 — 2008
SCHOOL **Grammar school in Hradec Králové**, mathematical class

PERIOD 2008 — 2011
DEGREE **Bachelor degree in Pure Mathematics**
RESULTS Summa cum laude, scholarship for the outstanding studying results (for years 2009, 2010)
UNIVERSITY Faculty of Mathematics and Physics, **Charles University in Prague**

PERIOD 2011 — 2013
DEGREE **Master degree in Mathematical Analysis**
SUPERVISOR **doc. RNDr. Dalibor Pražák, Ph.D.**
TOPIC **Dissipative partial differential equations on unbounded domains.**
RESULTS Summa cum laude, scholarship for the outstanding studying results (for years 2011, 2012)
UNIVERSITY Faculty of Mathematics and Physics, **Charles University in Prague**

EDUCATION IN PROGRESS

PERIOD October 2013 — to date
DEGREE **Ph.D. in Mathematical Analysis**
SUPERVISOR **prof. RNDr. Eduard Feireisl, DrSc.**
TOPIC **Mathematical analysis of equations describing fluid mechanics**
UNIVERSITY Faculty of Mathematics and Physics, **Charles University in Prague**
COOPERATING INSTITUTE Institute of Mathematics, **Academy of Sciences ČR**

CONFERENCES AND WORKSHOPS

- MAY 2013 **The 13th School in Mathematical Theory in Fluid Mechanics**, Kácov, Czech Republic
- OCTOBER 2013 Workshop: **Modelling Revisited + Model Reduction**, Chateau Liblice, Czech Republic
- MAY 2014 Workshop: **Regularity theory for elliptic and parabolic systems and problems in continuum mechanics**, Telč, Czech Republic
- JUNE 2014 **The week of doctoral students**, Prague, Czech Republic.
Short talk: **Compressible Navier Stokes Equations**
- JUNE 2014 **School on Nonlinear Analysis and Function Spaces**, Třešť, Czech Republic
- SEPTEMBER 2014 Conference: **Modeling, analysis and computing in nonlinear PDEs**, September 21-26, Chateau Liblice, Czech Republic. Short talk: **Navier-Stokes equation with Entropy Transport**
- NOVEMBER 2014 Participant of **Oberwolfach Seminar: Analysis of Compressible Navier Stokes Equations and Related Topics**, November 23-29, Mathematisches Forschungsinstitut Oberwolfach, Germany
- MAY 2015 Participant of **BCAM Workshop on Mathematics and its Applications**, 27-29 May, Bilbao, Spain.
Short speak on the topic: **Phase field modelling of melting and solidification**
- JUNE 2015 Workshop participation: **Young Researchers in Fluid Dynamics**, Darmstadt, Germany, June 17-19,
Short talk on topic: **Compressible flows, mathematical and numerical analysis.**
- JUNE - JULY 2015 Participation on the seminar: **Mathematical Thermodynamics of complex fluids** of Centro Internazionale Matematico Estivo, Cetraro, Italy, June 28 - July 4
- JANUARY 2016 Organizer of **The first meeting of Ph.D. students of mathematical analysis and differential equations**, Prague, Czech Republic, January 25-28
- MAY 2016 Workshop: **Regularity theory for elliptic and parabolic systems and problems in continuum mechanics**, Telč, Czech Republic
- MAY 2016 Participation on the workshop: **2nd Workshop on CENTRAL Trends in Analysis and Numerics for PDEs**, Prague, Czech Republic. Given talk: **Primitive equations and oscillatory solutions**
- JUNE 2016 Participation on the workshop: **Entropy methods, dissipative systems, and applications**, Schrödinger Institute, Wien, Austria
- JULY 2016 Participation on the summer school on Evolution Equations **EVEQ 2016**, Prague, Czech Republic
- SEPTEMBER 2016 Participation on: **The First China-Czech Conference on Mathematical Fluid Mechanics**, September 26 - 30, Beijing, China.
Invited talk: **Existence of global weak solutions for inviscid PDE models in oceanography.**
- OCTOBER 2016 **Talk on PDE and Applied Mathematics Seminar**, October 25, Technion - Israel Institute of Technology, Haifa, Israel
Given lecture: **Existence of global weak solutions for inviscid PDE models in oceanography.**

SCIENTIFIC VISITS AND INTERNSHIPS

OCTOBER 2014	Cooperation on some topics in fluid mechanics , October 14-23, Université du Sud - Toulon - Var, France
MARCH - MAY 2015	Participant of Doc Course of Applied Mathematics , Sevilla and Bilbao, Spain. Research project (under supervision of prof. Francisco Guillén): Mathematical and numerical analysis of the modified Caginalp model for melting and solidification.
JULY 2016	Cooperation with E. Chiodaroli - oscillatory solutions of equations used in oceanology , July 18-22, École polytechnique fédérale de Lausanne, Switzerland
OCTOBER-NOVEMBER 2016	Cooperation with A. Novick-Cohen - Coupling of the Navier-Stokes system with the Cahn-Hilliard equations , October 24 - November 4, Technion - Israel Institute of Technology, Haifa, Israel

LIST OF ACCEPTED OR PUBLISHED ARTICLES

- 2015 M. Michálek. Stability result for Navier-Stokes Equations with Entropy Transport. *Journal of Mathematical Fluid Mechanics*, 2015
- 2015 E. Feireisl, T. Karper, M. Michálek. Convergence of a numerical method for the compressible Navier-Stokes system on general domains. *Numerische Mathematik*, pp 1-38, *First online: 18 December 2015*
- 2016 E. Feireisl, R. Hošek, M. Michálek. A convergent numerical method for the full Navier-Stokes-Fourier system in smooth physical domains. *Accepted in SIAM J. Num. Math.*
- 2016 David Maltese and Martin Michálek and Piotr B. Mucha and Antonin Novotný and Milan Pokorný and Ewelina Zatorska. Existence of weak solutions for compressible Navier-Stokes equations with entropy transport. *Journal of Differential Equations*, *First online: 15 July 2016.*

LANGUAGE SKILLS

ENGLISH	Fluent
GERMAN	Working knowledge
FRENCH	Fair knowledge

TEACHING EXPERIENCE

- 2011-2013 **Basic Analysis, exercises for the first year students**, Charles University in Prague
- 2015 **Measure theory, exercises for the second year students**, Charles University in Prague
- 2016 **Tutor for students of mathematical analysis**, Charles University in Prague

OTHER SKILLS

PROGRAMMING	Working knowledge of Python, C#, Visual Basic and MATLAB
MATHEMATICAL MODELLING	knowledge of FEniCS and some other implementations of FEM and FVM