

## CURRICULUM VITAE

**Matteo Caggio**

### **PERSONAL DATA**

Born March 11, 1986, Ferrara, Italy.

### **RESEARCH INTEREST**

Navier-Stokes equations.

Turbulence.

### **EDUCATION**

2011: M.Sc. in Physics, University of Ferrara.

### **CURRENT POSITION**

Ph.D. student in Applied Mathematics at University of West Bohemia, Pilsen.

Student – employer at the Institute of Mathematics of Czech Academy of Science (Prague) under the supervision of Prof. Šárka Nečasová.

Research activity: Compressible and incompressible Navier-Stokes equations and related problems.

### **PUBLICATIONS (physics)**

Generation of limited-area ensemble system targeted for Northern Europe: a case study of wind gust (joint work with Andrea Montani – ARPA-SIMC, Bologna, Italy; in connection to the project: Limited-area ensemble forecasts of windstorms over Northern Europe).

### **PUBLICATIONS (mathematics)**

Inviscid, incompressible limits for rotating fluids (joint work with Šárka Nečasová; in preparation).

The rotating Navier-Stokes-Fourier-Poisson system on thin domains (joint work with Bernard Doucomet, Šárka Nečasová and Milan Pokorný; arXiv:1606.01054v1).

Regularity criteria for the Navier-Stokes equations based on one component of velocity (joint work with Zhengguang Guo and Zdeněk Skalák; submitted).

Dissipative measure-valued solutions to the compressible Navier-Stokes-Fourier system (joint work with Hind Al Baba and Šárka Nečasová; in preparation).

Note on the problem of dissipative measure-valued solutions to the compressible Navier-Stokes-Fourier system (joint work with Hind Al Baba, Bernard Ducomet and Šárka Nečasová)

## **CONFERENCES WITH CONTRIBUTION TALK**

First China-Czech Conference in Mathematical Fluid Mechanics (Beijing, China, 26 – 30/09/2016) – talk: Regularity criteria for the Navier-Stokes equations based on one component of velocity.

Seminar in Differential Equations (Ostrov, Czech Republic, 30/05 – 03/06/2016) – talk: On the problem of singular limits in fluid dynamics.

Workshop on CENTRAL Trends In Analysis and Numerics for PDEs, Charles University, Faculty of Mathematics and Physics (Prague, Czech Republic, 26 – 28/05/2016) – talk: On the problem of singular limits in fluid dynamics.

Singular PDEs, Analytical Tools and Applications (Male Ciche, Poland, 23 – 27/06/2015) – talk: Inviscid, incompressible limits for rotating fluids.

Two Days for Young Researchers in Fluid Dynamics (Darmstadt, Germany, 18 – 19/06/2015) – talk: Inviscid, incompressible limits for rotating fluids.

### **Other conferences**

Wall-Bounded Turbulence (International Center for Mechanical Sciences (CISM); Udine, Italy, 18 - 22/07/2016)

Topical Problems of Fluid Mechanics (Institute of Thermomechanics, Prague, Czech Republic, 11 – 13/02/2015).

Classical problems and new trends in mathematical fluid dynamics (Mathematical Department University of Ferrara, Italy, 29/09/2014 – 03/10/2014).

Regularity theory for elliptic and parabolic systems and problems in continuum mechanics (Telč, Czech Republic, 01 – 03/05/2014; 27 – 30/04/2016).

Topical Problems of Fluid Mechanics (Institute of Thermomechanics, Prague, Czech Republic, 19 – 21/02/2014).

Colloquium on Fluid Dynamics (Institute of Thermomechanics, Prague, Czech Republic, 23 – 25/10/2013).

Navier-Stokes Equations (Institute of Mathematics RWTH University of Aachen, Germany, 21 – 24/05/2013).

Navier-Stokes Equations (Institute of Mathematics RWTH University of Aachen, Germany, 29/05/2012 – 01/06/2012).

Consortium for Small-Scale Modeling meeting, Centro Alti Studi della Difesa (CASD), Rome, Italy, 05 – 09/09/2011).

Consortium for Small-Scale Modeling meeting (Academy of Sciences, Moscow, Russia, 06 – 10/09/2010).

## **SCHOOLS**

Fluids Under Pressure - summer school and workshop (Mathematical Institute, Prague, Czech Republic, 28/08/2016 - 02/09/2016)

Singular Random Dynamics (International Mathematical Summer Centre (CIME), Cetraro, Italy, 22 - 26/08/2016)

International Summer School on Evolution Equations (Prague, Czech Republic, 11 - 15/07/2016)

School on Turbulence (European High-Performance Infrastructures in Turbulence (EuHIT), Warsaw, Poland, 4 - 6/07/2016)

Mathematical theory in fluid mechanics (Kacov, Czech Republic, 22 – 29/05/2015).

Autumn School and Workshop (Bad Boll, Germany, 27 – 30/10/2014).

Particles in Flows, workshop and summer school (Institute of Mathematics, Academy of Sciences of the Czech Republic, Prague, 25 – 31/08/2014).

International Winter School on Mathematical Fluid Dynamics (Levico Terme, Trento, Italy, 16 – 21/12/2012).

## **VISITS**

University Paris-Est, Créteil (16 – 20/12/2015): Turbulence in fluids (lecture at university).

Humboldt University, Berlin (17 – 22/02/2014): Mathematical models of turbulence (discussion on physical and mathematical issues).

## **Additional activities**

BHAITECH Advanced Vehicle Centre, Padova, Italy (May – June 2013): Racing line optimization (project).

Mathematics Department, University of Ferrara, Italy (February – September 2012): Navier-Stokes equations and theory of turbulence (activity proposal).

National Research Council (CNR) Bologna, Italy (March - September 2011): Analysis of turbulence in the atmospheric surface layer (activity proposal).

Deutscher Wetterdienst (DWD), Offenbach, Germany (May 2011): Turbulence-schema modifications in the meteorological model COSMO (activity proposal).

ARPA - SIMC Bologna, Italy (November 2010 – January 2011): Turbulence in the atmospheric boundary layer (internship).

ARPA - SIMC Bologna, Italy (April – July 2008): Limited-area ensemble forecasts of windstorms over Northern Europe (project).

## **SKILLS**

Languages: Italian (mother tongue), English (fluent), French (school level), Czech (basic level; certificate A2).

Informatics: Windows, Linux, Fortran, Matlab.

## **CONTACTS**

phone number (italian): 0039 333 8 44 11 77

phone number (czech): 00420 776 584 353

e-mail: [caggio@math.cas.cz](mailto:caggio@math.cas.cz) – [matteocaggio@gmail.com](mailto:matteocaggio@gmail.com)