Dr. Bangwei She

Curriculum Vitae

Personal Information

Gender:	Male
Birth:	Apr, 1987, Anhui
Nationality:	Chinese
Email:	she@math.cas.cz
Tel:	+420 - 222 090 703
Address:	Zitna 25, 11567, Prague, Czech Republic
Homepage:	`http://www.math.cas.cz/homepage/main_page.php?id_membre=211`

Interests

viscoelastic fluids; (in)compressible Navier–Stokes; fluid–structure interaction

energy stability; convergence; finite volume; finite element; finite difference

Education

3.2012 - 3.2015	*Doctor of Natural Sciences* in Mathematics Faculty of Physics, Mathematics and Computer Science Johannes Gutenberg University Mainz, Germany
Thesis:	*Numerical simulation on some viscoelatic fluids.* *Supervisor: Mária Lukáčová*
9.2008 - 7.2011	*Master of Science* in Fluid Dynamics Institute of Applied Physics and Computational Mathematic, Beijing China Academy of Engineering Physics, Beijing, China
Thesis:	*Gas kinetic scheme for compressible two-phase flow model containing non-conservative terms.* *Supervisor: Guiping Zhao*
9.2004 - 7.2008	*Bachelor of Science* in Modern Mechanics Department of Modern Mechanics, University of Science and Technology of China, Hefei, China

Academic experience

since 5.2018	*Researcher* Czech Academy of Sciences, Prague, Czech Republic
since 2.2019	*Scientific researcher* (part time job associated to GAČR grant) Charles University in Prague, Czech Republic
7.2015 - 4.2018	*PostDoc* (Mentor: Eduard Feireisl) Czech Academy of Sciences, Prague, Czech Republic
3.2015 - 6.2015	*PostDoc* (Mentor: Mária Lukáčová) Johannes Gutenberg University Mainz, Germany
9.2013 - 3.2014	*PhD student* (research stay in Waseda University, Japan) 6-months stay funded by *German Research Foundation (DFG)*
3.2012 - 3.2015	*PhD student* (supervisor: Mária Lukáčová) Johannes Gutenberg University Mainz, Germany

Projects & Funding

1.2020 - 12.2022	*Czech Grant Agency (GAČR) grant* 20-01074S (PI: Vít Dolejší and Tomáš Vejchodský)
1.2019 - 12.2021	*Czech Grant Agency (GAČR)* No. 19–11707Y (PI: Sebastian Schwarzacher)
1.2019 - 12.2020	*Czech Grant Agency (GAČR)* No. 18–05974S (PI: Eduard Feireisl)
11.2018	*European Mathematical Society* solidarity travel grant
5.2018 - 12.2018	*Czech Grant Agency (GAČR)* No. 16–03230S (PI: Šárka Nečasová)
7.2015 - 4.2018	*ERC Advanced Grant* No. 320078 (PI: Eduard Feireisl)
3.2012 - 3.2015	*DFG IRTG* 1529 *"Mathematical Fluid Dynamics"*, doctoral scholarship

Academic activities

- **21 Invited seminar talks in 11 institutions**, including:
  Capital Normal University; Charles University; IAPCM in Beijing; Nanjing University; Nanhang University; Hohai University; AUST; TU Darmstadt; Tongji University; Waseda University; Uni-Zagreb.

- **21 talks on international conferences and workshops in 6 coutries**, including:
  China; Czech; France; Germany; Japan; and Slovakia, e.g. Oberwolfach; Equadiff 2017; Japanese-German International workshop; Sino-German workshop, Chinese-Czech conference;

- **20 research visits to 10 institutions**, including:
  Ecole des Ponts ParisTech, Paris; IAPCM, Beijing; JGU-Mainz; Polish Academy of Sciences, Warsaw; Waseda University, Tokyo; Nanjing University; Univerisity of Toulon; Beijing Normal University; Univeristy of Zagreb; and Commenius University in Bratislava.

- **7 publications** in impacted journals, including:
  J. Comput. Phys(1x), IMA J. Numer. Anal(1x), SIAM Multiscale Model. Simul.(1x), Int. J. Numer. Methods Fluids(1x), J. Numer. Math.(2x), ESAIM:M2AN(1x).
  5 preprints on the topic of stability/convergence of numerical solutions for multi-dimensional compressible Navier–Stokes and related-problems

- Mathscinet ID: 1165111
  Webofscience ID: P-4304-2017
  Scopus ID: 55047690100

Publications

2019 E. Feireisl, M. Lukáčová-Medvid'ová, H. Mizerová, and **B. She**.
Convergence of a finite volume scheme for the compressible Navier-Stokes system.
ESAIM: M2AN. 53(6):1957–1979. Doi: https://doi.org/10.1051/m2an/2019043

2019 R. Hošek and **B. She**.
Convergent numerical method for the compressible Navier-Stokes-Fourier system: a stabilized scheme.
IMA J. Numer. Anal. 39(4): 2045–2068. Doi: https://doi.org/10.1093/imanum/dry057

2018 H. Mizerová and **B. She**.
A conservative scheme for the Fokker-Planck equation with applications to viscoelastic polymeric fluids.
J. Comput. Phys. 374: 941–953. Doi: https://doi.org/10.1016/j.jcp.2018.08.015

2018 R. Hošek, and **B. She**.
Stability and consistency of a finite difference scheme for compressible viscous isentropic flow in multi-dimension.
J. Numer. Math., 26(3): 114–140. Doi: https://doi.org/10.1515/jnma-2017-0010

2018 E. Feireisl, M. Lukáčová-Medvid'ová, Š. Nečasová, A. Novotný and **B. She**.
Asymptotic preserving error estimates for numerical solutions of compressible Navier-Stokes equations in the low Mach number regime.
SIAM Multiscale Model. Simul. 16(1): 150–183. Doi: https://doi.org/10.1137/16M1094233

2016 M. Lukáčová-Medvid'ová, H. Notsu, and **B. She**.
Energy dissipative characteristic schemes for the diffusive Oldroyd-B viscoelastic fluid.
*Int.J.Numer.Methods Fluids*81(9):523–557. Doi: https://doi.org/10.1002/fld.4195

2016 M. Lukáčová-Medvid'ová, H. Mizerová, **B. She**, and J. Stebel.
Error analysis of finite element and finite volume methods for some viscoelastic fluids.
J. Numer. Math., 24(2): 105-123. Doi: https://doi.org/10.1515/jnma-2014-0057

Preprints

2020 H. Mizerová, and **B. She**:
Convergence and error estimates for a finite difference scheme for the multi-dimensional compressible Navier-Stokes system.
Preprint: `https://arxiv.org/abs/2002.07524`

2020 S. Schwarzacher, and **B. She**:
On numerical approximations to fluid-structure interactions involving.
Preprint: `https://arxiv.org/abs/2002.04636`

2020 M. Lukáčová-Medvid'ová, H. Mizerová, and **B. She**:
New invariant domain preserving finite volume schemes for compressible flows.
Preprint: `www.math.cas.cz/fichier/preprints/IM_20200115092406_15.pdf`

2019 E. Feireisl, M. Lukáčová-Medvid'ová, **B. She**, and Y. Wang:
Computing oscillatory solutions of the Euler system via $\mathcal{K}$-convergence.
Preprint: `http://arxiv.org/abs/1910.03161`

2019 E. Feireisl, M. Lukáčová-Medvid'ová, H. Mizerová, and **B. She**:
On the convergence of a finite volume scheme for the compressible Navier–Stokes–Fourier system.
Preprint: `https://arxiv.org/abs/1903.08526`