BABAK MABOUDI AFKHAM

PERSONAL INFORMATION

Born on 22 March 1989

Nationality Iranian

email babak.maboudi@epfl.ch

phone (M) +41 78 627 46 97

INTERESTS

Research Model Order Reduction.

Other Interests Differential Geometry, Approximation Theory, Uncertainty Quantification, Machine Learning, High-Performance Computing

EDUCATION

Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne-Switzerland

2014-present Ph.D. in Computational Mathematics and Simulation Science
Advisor: Prof. Jan S. Hesthaven
Research topic: Structure-Preserving Model-Reduction

Massachusetts Institute of Technology (MIT), Cambridge-United States of America

2017-2018 Exchange Graduate Student in Aeronautics and Astronautics
Advisor: Prof. Karen Willcox
Research topic: Energy-Preserving Model-Reduction for Euler's Equation

Royal Institute of Technology (KTH), Stockholm-Sweden

2012-2014 M.Sc. in Scientific Computing
Advisor: Prof. Anna-Karin Tornberg
Thesis topic: Simulation of elastic rods with intrinsic curvature and twist immersed in fluid

Sharif University of Technology (SUT), Tehran-Iran

2007-2012 B.Sc. in Theoretical Mathematics
Advisor: Prof. Mohammad Reza Razvan
Thesis topic: Learning Spectral Clustering

AWARDS

2017 The SNSF Doc.Mobility grant, 2017.

2014 The SMC (Stockholm Mathematics Center) award for excellent master thesis, 2014.

2013 KTH tuition fee waiver, 2013.

PUBLICATIONS

2018 Babak Maboudi Afkham, Jan S. Hesthaven, "Structure-Preserving Model-Reduction of Dissipative Hamiltonian System", Journal of Scientific Computing (2018): 1-19

2017 Babak Maboudi Afkham, Jan S. Hesthaven, "Structure-Preserving

Model-Reduction of Parametric Hamiltonian System", SIAM Journal on Scientific Computing 39.6 (2017): A2616-A2644

UNDER REVIEW/PREPARATION WORK

2018 Babak Maboudi Afkham, Nicolò Ripamonti, Qian Wang, Jan Hesthaven, "Conservative Model Order Reduction for Fluid Flow" - Submited to MS&A, Springer.

2018 Babak Maboudi Afkham, Ashish Bhatt, Bernard Haasdonk, Jan S. Hesthaven, "Symplectic Model Reduction with a Weighted Inner Product", under preparation.

TEACHING AND SUPERVISION

2014-2017 Principal Teacher Assistant of Analysis I and II: Holding 8 hours of lecture, Holding Exercise classes,Designing weekly exercise sheets

2017 Co-supervisor of the master thesis: "Energy preserving model reduction of fluid dynamics", Nicolo Ripamonti

2015 Supervisor of the semester project: "Hamiltonian formulation for non-conservative systems", Bozorgmehr Aminian

INVITED TALKS AT INTERNATIONAL CONFERENCES AND WORKSHOPS

2018 MoRePaS 2018 Conference - Nantes, France
Keynote: "Model Order Reduction While Preserving a First Integral"

2016 MORCIP - Workshop on Model Order Reduction for Control & Inverse Problems, EPFL
Invited Speaker: "Structure-Preserving Model Reduction of Hamiltonian Systems"

2016 ALOP - Workshop on Reduced Order Models in Optimization, The University of Trier
Invited Speaker: "Structure-Preserving Model Reduction of Hamiltonian Systems"

LANGUAGES

English (Professional working proficiency), Persian (Mother Tongue), French (Intermediate Proficiency)

HOBBIES

Rock-climbing, Mountaineering (Mount Kilimanjaro 5895m, Mount Damavand 5678m), Distance Running

REFERENCES

Prof. Jan S. Hesthaven
Ecole Polytechnique Fédérale de Lausanne (EPFL)

Prof. Bernard Haasdonk
University of Stuttgart

July 23, 2018