Saeed Parvar

About me

PhD in Mechanical engineering and a CFD engineer with more than 10 years of experience in code developing and utilizing CFD packages. **Expertise numerical modelling of turbulent non-Newtonian fluid** (LES/DNS) and proposing semi-analytical solutions to analyse the corresponding laminar flows and verifying CFD code, numerical simulation of multi-material compressible reactive and non-reactive flow.

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https://pasha0313.github.io/Saeed/
https://scholar.google.com/citations?user=Te8VKkEAAAAJ&hl=en
www.researchgate.net/profile/Saeed_Parvar
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Experience	
2021-until now	Postdoctoral researcher at The Royal Institute of Technology (KTH), Supervisor: Prof. Outi Tammisola Project title: The instability in non-Newtonian Fluid.
2020 - 2021	Researcher at INEGI, Institute of Science and Innovation in Mechanical and Industrial Engineering, Supervisor: Prof. Fernando Pinho Project title: Heat transfer in laminar boundary and mixing layer, and jet flow of FENE-P fluid
2018	Visiting researcher at Alberto Luiz Coimbra Institute for Graduate Studies and Research in Engineering (Coppe), Federal University of Rio de Janeiro (UFRJ), Supervisor: Prof. Hamidreza Anbarlooei Project title: DNS of turbulent non-Newtonian flow in a rod-roughened channel
2017 - 2020	FCT researcher at The Mechanical Engineering Department Faculty of Engineering, University of Porto (FEUP), Porto, Portugal Supervisor: Prof. Fernando Pinho Project title: Developing an LES model for inhomogeneous wall-free turbulent viscoelastic fluid flows
2012 – 2016	Researcher & Lecturer at The Mechanical Engineering Department Payam Nour University of Rasht. Teaching activities: Thermodynamics, Heat and Mass Transfer, Advance English, Industrial Drawing.
2012 – 2017	Supervising Engineer at Mechanical Installation Group Guilan Construction Engineering organization, Rasht

Education

2018-2021	PhD: Mechanical Engineering, Fluid Dynamics Faculty of Engineering, University of Porto (FEUP), Porto, Portugal Supervisor: Prof. Fernando Pinho Thesis: An LES model for inhomogeneous wall-free turbulent flows and flow characteristics in laminar wall-free and wall-dominated viscoelastic fluid flows
2007 – 2010	Master of Science: Aerospace Engineering, Aerodynamics Tarbiat Modares University, Tehran Supervisor: Prof. Kiumars Mazaheri Thesis: Non-reflecting Boundary Condition in Reactive-Flow Simulation.
2002 – 2007	Bachelor of Science: Mechanical Engineering, Thermal and Fluid Mechanics Guilan University, Rasht, Guilan Thesis: Tidal Power System

Research Interests

Turbulence, Numerical Modelling of turbulent flows (DNS, LES)
Complex Flow, Shear thinning and thickening, Polymeric Fluid, Constitutive equations.
Multiphase or Multi Material Flow, (Level Set technique), incompressible and compressible flow
Laminar Boundary layer type flow (flat plate, mixing layer, jet), Similarity Solution.
Transport phenomena (Heat and Mass Transfer)

Publication in

Journal

1- S. Parvar, C. B. da Silva, F. T. Pinho, Thermal boundary layer of laminar flow of dilute polymer solution, *International Journal of Heat and Mass Transfer*,185(1):122248, April 2022.

2- S. Parvar, C. B. da Silva, F. T. Pinho, The steady laminar planar mixing layer flow of viscoelastic FENE-P fluids, *Journal of Engineering Mathematics*, 132(1), February 2022.

3- S. Parvar, C. B. da Silva, F. T. Pinho, Large Eddy Simulations of Turbulent Planar Jets of Viscoelastic FENE-P Fluids, *Physics of Fluids*, 33(4):45110, April 2021. Presented in XX International Workshop on Numerical Methods for Non-Newtonian Flows

4- S. Parvar, C. B. da Silva, F. T. Pinho, Revisiting the flat plate laminar boundary layer flow of viscoelastic FENE-P fluids, *Physics of Fluids*, 33(2):023103, February 2021.

5- S. Parvar, C. B. da Silva, F. T. Pinho, Local similarity solution for steady laminar planar jet flow of viscoelastic FENE-P fluids, *Journal of Non-Newtonian Fluid Mechanics*, 279:104265, March 2020.

6- S. Parvar, H.R. Anbarlooe A. R. Alipoor, Simulation of compressible multi-material flow by 2D hydrodynamic code, *Journal of Modaress Mechanical Engineering*, 17(2):211-220, March 2017. Nominated Paper in ISME 2015

7- S. Parvar, K. Mazaheri, Investigating the domain length for simulation of gaseous detonation, *Journal of Modaress Mechanical Engineering*, Vol 15(1):277-284, 2015.

8- Y. Mahmoudi, K. Mazaheri, S. Parvar, The Role of Hydrodynamic Instabilities and Transverse Waves in Propagation of Gaseous Detonations, *Acta Astronautica*, 91:263–282, October–November 2013.

Conferences

1- S. Parvar, C. B. da Silva, F. T. Pinho, Developing turbulence models for Large-eddy simulation of jet flows of viscoelastic fluids, *EuroHPC Summit Week 2020*, 23 March 2020 to 27 March 2020, Porto, Portugal, (due to COVID-19, online poster).

2- S. Parvar, C. B. da Silva, F. T. Pinho, Local similarity solution for steady laminar planar jet flow of viscoelastic FENE-P fluids, June 2019, *IWNMNNF 2019 19th International Workshop on Numerical Methods for Non-Newtonian Flows*, Oral communications and presented by me.

3- S. Parvar, H. R. Anbarlooei, F. Pinho, D.O.A. Cruz, Direct Numerical Simulation of turbulent Non-Newtonain flow in a rod-roughened channel, Turbulence, Heat and Mass Transfer 2018, DOI: 10.1615/THMT-18.1000, Oral communications and presented by Prof. Anbarlooei.

4- H.R. Anbarlooe, S. Parvar, Numerical Simulation of Shocked-Induced Instabilities in Multiphase Mediums, *1st Pan American Congress on Computational Mechanics* – PANACM 2015, in conjunction with the XI Argentine Congress on Computational Mechanics – MECOM 2015, Oral communications and presented by Prof. Anbarlooei.

5- S. Parvar, H.R. Anbarlooe, Eliminating Non-Physical Oscillation in Multi-Material Compressible Flow, *the 23rd ABCM International Congress of Mechanical Engineering* - COBEM2015, Oral communications and presented by Prof. Anbarlooei.

6- H.R. Anbarlooe, S. Parvar, A. Alipoor, Non-oscillatory Approach in Multi-phase Compressible Simulation, *The 23nd International Conference on Mechanical Engineering*, ISME 2015, Iran, Oral communications and presented by me.

7- S. Parvar, H.R. Anbarlooe, A. Alipoor, Eliminating non-physical instability in compressible multi-fluid, *The 23nd International Conference on Mechanical Engineering*, ISME 2015, Iran, Oral communications and presented by me.

8- S. Parvar, A. Alipoor, H.R. Anbarlooe, Numerical Simulation of In -compressible Flows in Step Problems by Simple method & Large Eddy Simulation, *The 22nd International Conference on Mechanical Engineering*, ISME 2014, Iran, Oral communications and presented by me.

9- S. Parvar, K. Mazaheri, Y. Mahmoudi, Non-reflecting Boundary Condition in Detonation Simulation (2D), *The 10th Conference of Iran Aerospace society*, Feb 2011, Oral communications and presented by me.

10- S. Parvar, K. Mazaheri, Non-reflecting Boundary Condition in Detonation Simulation (1D), *The 3rd Fuel & Combustion Conference of Iran*, 2010, Oral communications and presented by me.

Software Skills

Programming: Fortran, MATLAB, C, Phyton, Anaconda, Visual Studio & Visual Studio Code.
CFD Package: OpenFoam, RheoFoam, Fluent, Gambit, Autocad.
HPC: (PBS and Slurm), MPI, OpenMp
Other software packages: Tecplot and Paraview, Maple.

Language

English (fluent), Persian(native), Portuguese(intermediate), Turkish(intermediate),

Advanced Course

Debugging and Optimization of Scientific Applications: November 2017, CINECA- Bologna offices
1st Summer School on Complex Fluid-Flows in Microfluidics, July 2017, FEUP, Porto (Portugal).
2nd Iberian meeting of OpenFOAM technology users, May 2018, Santiago de Compostela, Spain.
19th international workshop on numerical methods for non-Newtonian Flows, June 2019, Peso da Regua, Portugal.

References	
Prof. Fernando Pinho	Professor of the Mechanical Engineering Department, University of Porto, Porto, Portugal. Email: fpinho@fe.up.pt; https://paginas.fe.up.pt/~fpinho/
Prof. Outi Tamissola	Associate Professor of the Mechanical Engineering Department, The Royal Institute of Technology (KTH), Stockholm, Sweden. outi@mech.kth.se; https://www.kth.se/profile/outi?l=en.
Prof. Hamidreza Anbarlooei	Assistant Professor of the Department of applied mathematics, Federal University of Rio de Janeiro. Email:hamid@matematica.ufrj.br; https://www.researchgate.net/profile/Hamidreza_Anbarlooei
Prof. Alexandre Afonso	Assistant Professor of the Mechanical Engineering Department, University of Porto, Porto, Portugal. Email: aafonso@fe.up.pt; https://www.researchgate.net/profile/Alexandre_Afonso2
Dr. Francisco J. Galindo-Rosales	Senior Researcher at the Chemical Engineering Department, University of Porto, Porto, Portugal. Email: galindo@fe.up.pt; https://www.researchgate.net/profile/Francisco_Galindo-Rosales
Prof. Kiumars Mazaheri	Professor of the Mechanical Engineering Department, Tarbiat Modares University, Tehran, Iran, Email: kiumars@modares.ac.ir; http://www.modares.ac.ir/en/Schools/mch/academic-staff/~kiumars