Dariush **Azimi**

Physicist

Summary

Structured Physicist with a specialized M.Sc. in Nuclear Physics and M.Sc. in Computational Physics. Deep theoretical and practical knowledge of radiation protection, dose measurement, and dosimetry principles. Proven ability to conduct precise technical verifications and maintain high-quality standards in safety-critical environments. Fluent in Swedish and English, with a proactive and solution-oriented approach to operational tasks.

personal

Dariush Azimi
2021

Areas of specialization

- Electrical Systems Analysis and Modeling
- System Design
- Computational Physics and Advanced Simulation (FEM, CFD, Particle-in-Cell, Molecular Dynamics)
- Algorithmic Development and Numerical Methods
- Data Analysis and Visualization
- Mathematical Modeling for Complex Systems

Interests

Simulation and modeling
Coding
Theoretical physics

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Short Resumé

2010-2013 **Teaching and researches**
Iran · Researches and teaching
Teaching and doing researches which has led to some publications.

2013-2020 **Pursuing educations**
Sweden · edu.
Pursuing my educations at SU and Umeå universities

Degrees

2019 **Physics**
M.Sc. · Umeå Uni.
Certified (Involved in study of linear and non-linear properties of plasma via kinetic theory)

2017 **Computational Physics**
M.Sc · Stockholm Uni
Certified (Involved in wave packet study of dissociation recombination)

2011 **Theoretical Nuclear Physics**
M.Sc. · Mazandaran Uni
Certified (Involved in statistical study of hard sphere mixtures)

2008 **Solid State Physics**
B.Sc. · Shahrood Uni
Certified

Other passed curses

2021 **String Theory**
at · Chalmers Uni.
(7.5 credit)

2021 **Cosmology**
at · Chalmers Uni.
(7.5 credit)

Programing skills

- C, C++
- LaTeX
- Python
- Fortran
- MPI (c++)
- Comsol
- Origin, Sigma plot

Technical skills

- Radiation Physics: Expertise in radiation types, dose calculations, and measurement methodology.
- Dosimetry & Monitoring: Familiarity with the principles of whole-body measurements and radiological environmental control.
- Data Integrity: Highly meticulous in record-keeping, archive management, and technical documentation.
- Lab Software: Advanced proficiency in MATLAB and Python for analyzing and verifying measurement results.
- Safety & Ethics: Strong commitment to fossil-free energy and rigorous safety standards in nuclear facilities.
- COMSOL Multiphysics (Expert): Thermal analysis, Fluid Dynamics, and Electromagnetic simulations (implied by Physics background).
- Python (Expert): For data handling, analysis, and post-processing of simulation results. C/C++, MPI: High-performance algorithm development.
- Kinetic Theory, Statistical Physics, Wave Propagation (The basis for understanding electrical and control requirements).

Professional experiences

2013-2021 | **Research and Computational Experience**
In Sweden ·
1) Measurement Accuracy: Managed the calibration and verification of sensitive laboratory hardware, ensuring all measurements met high-quality standards.
2) Systematic Documentation: Responsible for archiving and record-keeping of technical data, similar to the "dospass" and register management required at Forsmark.
3) Operational Troubleshooting: Resolved technical issues independently, maintaining a focus on progress and solution-delivery within laboratory settings.
4) Numerical Analysis: Utilized computational tools to simulate physical interactions, providing a strong foundation for dose and dosimetry-related analysis.
5) Methodical Execution: Conducted independent projects with a focus on meeting deadlines and maintaining quality under strict scientific standards.
6) Collaboration: Successfully collaborated within diverse teams, contributing a constructive and engaged attitude toward group goals.

2021-2022 | **Teacher substitut**
· Lararpoolen
1) Managed classroom activities and adapted teaching methods, demonstrating flexibility and ability to handle multiple activities simultaneously. 2) Communicated complex concepts clearly to diverse audiences, enhancing communication skills vital for a dispatch role.

2011 | **Teaching general Physics**
· Graduate school of Applied Sciences in Iran.

2011-2013 | **Instructur**
Electrical circuit · Laboratory: Taught general physics and led the Electrical Circuit Laboratory, which involved explaining complex concepts to diverse audiences and managing practical lab sessions.
Mazandaran University

Publication

[1] M. Azimi, Theoretical Study of Equation of State of Binary Hard Sphere Mixture of Hydrogen Isotopes, MSc Thesis, Mazandaran University, July (2011).
[2] M. Azimi, Wave packet study of dissociative recombination and ion-pair formation of HeH^+, M.Sc. Thesis, Stockholm University, November (2017). Link: `https://www.dropbox.com/s/vlmr8hgd2jstbbf/Thesisx.pdf?dl=0`
[3] S. M. Motevalli, M. R. Pahlavani, M. Azimi, Theoretical Investigations of Properties of Hydrogen and Helium Mixture Based on Perturbation Theory, Int. J. Mod. Phys. B 26, 1250103 (2012). Link: `https://doi.org/10.1142/S0217979212501032`
[4] S. M. Motevalli, M. R. Pahlavani, M. Azimi, Effects of Isotopic Concentrations Thermodynamical Parameters of DT Mixtures Accepted in Communication Theoretical Physics (2013). Link: `http://dx.doi.org/10.1088/0253-6102/60/1/15`
[5] Book chapter: S. M. Motevalli, M. Azimi, Quantum statistical perturbation theory in fluid mixtures, Intech. Link: `http://dx.doi.org/10.5772/54056`
[6] S. M. Motevalli, M. Yari, M. Azimi, Survey of segregation alteration of hydrogen- helium mixtures via structure factor Moscow Univ. Phys. (2016) 71: 279. Link: `https://link.springer.com/article/10.3103/S0027134916990017#citeas`
[7] M. Azimi, Study of linear and nonlinear properties of plasma in framework of kinetic theory via PIC simulation, Thesis, Umeå University (2019). Link: `https://www.dropbox.com/s/g3h2fsz0ipfyodb/Compile.pdf?dl=0`

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Research Experience

- Umeå University, Sweden (2017-2019) a) Conducted PIC simulations to study linear and non-linear properties of plasma. b) Developed and implemented code in C++ and MPI for parallel computing. c) Analyzed simulation data and presented findings in reports and presentations.
- Data Analysis and Visualization: Proficient in analyzing and visualizing complex datasets using Python, Origin, and SigmaPlot.
- Computational Methods: Density functional theory, iterative solvers, numerical methods (GMRES, BiCGSTAB, conjugate gradient).
- COMSOL Multiphysics: Experience in using COMSOL for simulations, including fluid dynamics.

Languages

Persian	C2	mother tongue
English	C2	● ● ● ●
Swedish	C2	● ● ● ● SVA 3

Hobbies

- Excersising taekwondow
- Playing nei
- Jogging

My extra-curricular Activities

2007-2008	Computer hard ware courses, Ghaemshahr, Iran Technical and Vocational Training Organization.
2007-2008:	Vocational Welding Training course, Ghaemshahr, Iran Technical and Vocational Training Organization

References

[1] **Name: Gert Brodin, Professor**
Email: gert.brodin@umu.se · Address: Umeå University, Fysikhuset, FA423
Telephone: 090-786 57 71

[2] **Name: Michael Bradley, Professor**
Email: michael.bradley@umu.se · Address: Umeå University, Fysikhuset, FA421
Telephone: 090-786 77 17

[3] **Name: Seyyed Mehdi Hosseini Jenab, postdoktor**
Email: mehdi.jenab@chalmers.se, mehdi.jenab@umu.se · Address: Umeå University, Fysikhuset, FA404
Telephone: 090-786 60 78

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