

Pouria Rashed Mohassel

Contact Information

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Research Interests

Atomic & Molecular physics

Electromagnetic Wave Propagation: Behavior of waves, Instabilities, Couplings, Polarizations,

Plasma Physics: Theoretical Investigation and Numerical Simulation

Plasma Astrophysics: Formation of Shock waves, Generation of Cosmic Rays, Particle acceleration mechanisms

Education

PH. D. IN ATOMIC&MOLECULAR (PLASMA) PHYSICS| SEP. 2017 –MAY 2021| SHAHID BEHESHTI UNIVERSITY, PHYSICS DEPARTMENT

- Ph. D Courses finished with GPA: 18.5/20
- Thesis: Acceleration of Charged Particle by Plasma Shock Waves in the Interstellar Medium
- Supervisor: Dr. M. Ghorbanalilu

M. SC. IN PLASMA PHYSICS | SEP. 2012-FEB. 2015 | KHARAZMI UNIVERSITY, DEPARTMENT OF PHYSICS AND INSTITUTE FOR PLASMA RESEARCH

- Thesis: Interaction of Electromagnetic Waves and Plasma Waves in a Relativistic Motional Plasma
- Supervisor: Dr. A. Hasanbeigi
- Advisor: Dr. H. Mehdian

B. SC. IN SOLID-STATE PHYSICS | SEP. 2005-FEB. 2010 | UNIVERSITY OF TEHRAN, DEPARTMENT OF PHYSICS

Publications

- **Rashed-Mohassel P**, Ghorbanalilu M. Scatter-free acceleration of particles by interaction with plasma shock waves in the interstellar medium. Monthly Notices of the Royal Astronomical Society. 2021 May;503(2):2195-202.
- **Rashed-Mohassel P**, Ghorbanalilu M. Particle acceleration by interstellar plasma shock waves in non-uniform background magnetic field. Monthly Notices of the Royal Astronomical Society. 2020 Nov;498(4):5517-23.

- Ghorbanalilu M, **Rashed-Mohassel P**, Akbari-Moghanjoughi M. Control of ordinary and extraordinary waves excitation by an axial magnetic field in motional plasma. High Energy Density Physics. 2020 Aug 1;36:100750.
- **Rashed-Mohassel P**, Hasanbeigi A, Hajisharifi K. Interaction of plasma and electromagnetic waves in warm motional plasma: Local approximation method. High Energy Density Physics. 2017 Mar 1;22:55-9.
- **Rashed-Mohassel P**, Hasanbeigi A, Hajisharifi K. Interaction of electromagnetic and plasma waves in warm motional plasma: Density and thermal effects. The European Physical Journal Plus. 2017 Aug;132(8):1-7.
- **A Book Regarding Physics and Electromagnetics is Under Translation**

Experiences

RESEARCH ASSISTANT | NOV 2018-MAY 2021

- Function: Research (all aspects of the research were done independently, and the results were reported in form of an article to the supervisor before submission to the journal)

HIGH VOLTAGE ENGINEERING LAB., UNIVERSITY OF TEHRAN | JUNE 2016-JULY 2017

- Function: Tests, Measurements (voltage transformers, circuit breakers, Experimental setups...)

HIGH CURRENT LAB., | UNIVERSITY OF TEHRAN | JUNE 2016-JULY 2017

- Function: Tests for certification, Measurements (including current transformers, bus ducts, contactors Experimental setups ...)

FREELANCE TUTORSHIP | MAY 2017-NOW

- Tutorship in Physics, Mathematics and English for High School Students and Primary University students

INSTRUCTOR | WINTER 2016-WINTER 2018

- Tutorship in Physics and Mathematics Mainly Attending One to One and Group Classes for High School Students

SHORT COURSES

- Plasma antenna, Plasma medicine, Comsol Simulations, Digital cockpit

Familiarity with Computer Software

Windows software and packages: Microsoft Office Package, windows facilities

Programming languages and applications (a few sample projects are live on <https://github.com/prashedm>):

- Python (advanced general coding, currently coding for numerical simulations)
- Django (a self-created portfolio is live as a sample on pouriar.m.pythonanywhere.com)
- Fortran 95 (advanced general coding, mostly used to find numerical solutions for nonlinear equations)
- Wolfram Mathematica (expert, used for all projects)
- Latex (used for writing articles)

Language Proficiency

- **Persian:** Native
- **English:** Fluent
- **ACADEMIC IELTS 7 (Nov. 2016)**
Listening: 7.5 Reading: 6.5 Writing: 6 Speaking: 7.5

Hobbies

- **Expert in Constructing aquariums, establishing water flow filtration system and constructing handmade aquarium stuff**
- **More than 20 years of experience in keeping species of freshwater and marine fish and other sub water livestock in addition to breeding any species of fish (mostly freshwater cichlids, particularly Discus fish)**

References

- Dr. Mohammad Ghorbanalilu
Associate Professor at Shahid Beheshti University
moalilu@gmail.com/m_alilu@sbu.ac.ir
- Dr. Kamal Hajisharifi
Assistant Professor at Kharazmi University
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- Dr. Alireza Niknam
Professor at Shahid Beheshti University
a-niknam@sbu.ac.ir
- Dr. Ali Hasanbeigi
Associate Professor at Kharazmi University
ahbeigi@gmail.com/hbeigi@khu.ac.ir