

# MOHADDESEH MOHAMMADI

Ph.D. Student of Physics

📍 IASBS  
☎ +98 930 111 77 84  
✉ primohad@gmail.com  
in primohad

## WHO AM I?

I am a Ph.D. student specializing in Optics at the Institute for Advanced Studies in Basic Sciences (IASBS). Guided by Prof. Saifollah Rasouli, my research focuses on the geometric properties of combined half-integer Bessel-like beams. I explore various beam types, study their applications, and investigate beam orthogonality and the generation of Arago-Poisson's spot using structured light. Mathematics fascinates me, and I find joy in uncovering natural phenomena through observations and computations. The field of optics, with its simulations and experiments, is a constant inspiration for me.

MATLAB  
C++  
Python  
HTML5  
LaTeX  
Office

## EXPERIENCE

Spring/2023 part time	<b>Advanced Optics and Photonics 2</b>	Teaching Assistant
Winter/2023 part time	<b>Advanced Optics and Photonics 1</b>	Teaching Assistant
Spring/2022 part time	<b>Advanced Optics and Photonics 1 Laboratory</b>	Teaching Assistant
Spring/2022 part time	<b>Modern Physics Laboratory</b>	Teaching Assistant
Winter/2022 part time	<b>Modern Physics Laboratory</b>	Teaching Assistant
Fall/2021 part time	<b>Modern Physics Laboratory</b>	Teaching Assistant
Spring/2019 part time	<b>Modern Physics Laboratory</b>	Teaching Assistant
Fall/2018 part time	<b>Thermodynamics Laboratory</b>	Teaching Assistant

## EDUCATION

2015 – Now	<b>Continuous Ph.D. Student of Physics</b> Rank in educational part: 3/12 with average Score: 18.03/20 <u>Thesis</u> : Investigation on Orthogonality and Geometrical Properties of Combined half-integer Bessel-like beams <u>Supervisor</u> : Prof. Saifollah Rasouli	IASBS/Zanjan
2014	<b>Diploma in Mathematics and Physics</b> Average score: 19.93	Shahed Highschool/Rasht

## PUBLICATIONS

2023	<b>Experimental Generation of the spatial asymmetric beams with the properties of the combined half-integer Bessel-like beams</b> Ariz Abdi, Peyman Soltani, and Saifollah Rasouli with Mohaddeseh Mohammadi	The 29th Iranian Conference on Optics and Photonics (ICOP 2023)
2023	<b>Conditional orthogonality of the combined half-integer Bessel-like beams</b> Saifollah Rasouli with Mohaddeseh Mohammadi	Under prepration

## PROFESSIONAL CONFERENCES ATTENDED

2023	<b>The 29th Iranian Conference on Optics and Photonics (ICOP 2023) and the 15th Iranian Conference on Photonics Engineering and Technology (ICPET 2023)</b>	Shiraz University of Technology (SUTech) / Shiraz
2020	<b>One-day workshop on working in the physics laboratories of the faculty</b>	Institute for Advanced Studies in Basic Sciences (IASBS) / Zanjan
2019	<b>International School and Conference on Quantum Information Theory abd Open Quantum Systems</b>	Azarbaijan Shahid Madani University (ASMU) / Tabriz
2019	<b>The First National Conference On Emerging Technologies in Quantum Optics</b>	Isfahan University of Technology (IUT) / Isfahan
2019	<b>The 24<sup>th</sup> Special School on Topics in Physics</b>	Institute for Advanced Studies in Basic Sciences (IASBS) / Zanjan
2018	<b>The 23<sup>th</sup> Special School on Topics in Physics</b>	Institute for Advanced Studies in Basic Sciences (IASBS) / Zanjan

## PROJECTS

2022-2023	<b>Investigation on orthogonality feature of the combined half-integer Bessel-like beams</b>	Institute for Advanced Studies in Basic Sciences (IASBS) / Zanjan
2023	<b>Generation of Arago-Poisson's spot using structured light</b>	Institute for Advanced Studies in Basic Sciences (IASBS) / Zanjan
2023	<b>Magic numbers in the shape of radial carpet beams</b>	Institute for Advanced Studies in Basic Sciences (IASBS) / Zanjan
2022	<b>Practical investigation on the divergence of the spatially asymmetric beams</b>	Institute for Advanced Studies in Basic Sciences (IASBS) / Zanjan

## HOBBIES

In my free time, I enjoy pursuing hobbies that help me learn and grow. One of my favorite pastimes is online learning, where I explore new topics and gain knowledge on various subjects. I also find joy in coding with MATLAB, a programming language that allows me to bring my ideas to life and solve interesting problems. Additionally, I have a keen interest in data analysis and visualization, where I uncover insights from information and present them in visual and understandable ways. These hobbies provide me with continuous learning opportunities and allow me to express my creativity and analytical thinking.

## REFERENCES

1

**Prof. Saifollah Rasouli**  
rasouli@iasbs.ac.ir

**Institute for Advanced Studies in  
Basic Sciences (IASBS) / Zanjan**