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PERSONAL First & Last names: Mojtaba Najafizadeh
 Place of birth: Neyshaboor, Iran
 Marital status: Married, 2 children (7 & 9 years)
 Gender & Nationality: Male, Iranian

EDUCATION

- **PhD in Physics** (Sep 2022 - Feb 2025): Ferdowsi University of Mashhad, Mashhad, Iran.
 Concentration: Elementary Particles and Field Theory
 Supervisor: Dr. Hamid Reza Afshar
 Thesis subject: Carrollian Field Theory (Evaluation: 20.00 out of 20.00 – Excellent)
 Honor: Awarded grant from Iran National Science Foundation (INSF) under project No. 4028530
- **MSc in Physics** (2006 - 2008): Tarbiat Modares University, Tehran, Iran.
 Concentration: Theoretical physics
 Honor: The top student (among 4 students) with a cumulative GPA of 17.22 (out of 20.00)
- **BSc in Physics** (2002 - 2006): University of Birjand, Birjand, Iran.
 Concentration: Theoretical physics
 Honor: The top student (among 17 students) with a cumulative GPA of 17.33 (out of 20.00)

VISITS

- **(Sep 2017 - Present)**: Institute for Research in Fundamental Sciences (IPM), Tehran, Iran.
- **(January 6-10, 2025)**: New York University, Abu Dhabi, UAE.
 Invited to present a poster at Strings 2025, NYU Abu Dhabi, January 2025.
- **(Mar 2019 - Apr 2019)**: Erwin Schrödinger International Institute (ESI), Vienna, Austria.
 Awarded grant of 2.4k Euros by the ESI across the visit.
- **(March 16-24, 2017)**: International Center for Theoretical Physics (ICTP), Trieste, Italy.
- **(Oct 2015 - Aug 2017)**: University of Tours, Tours, France.
 Advisor: Xavier Bekaert
 Awarded research grant of 6k Euros from Iran's research Ministry to visit the University of Tours (France)

MEMBERSHIP Permanent member of the Physics Society of Iran (PSI)
 Member of the American Physical Society (APS), April 2025 – April 2026

LANGUAGES Persian (mother tongue), English (good), French (beginner), Arabic (Familiar)

REFEREE

- Journal of Physics A: Mathematical and Theoretical
- The European physical journal plus
- Classical and Quantum Gravity
- New Journal of Physics

PUBLICATIONS

1. M. Najafizadeh, *Post-Carrollian mechanics, ideal gas and gravity*, *Int. J. Mod. Phys. A* **40**, no.27, 2550122 (2025), [arXiv:2509.14330].
2. H. Afshar, X. Bekaert, M. Najafizadeh, *Classification of conformal Carroll algebras*, *JHEP* **148**, 12 (2024), [arXiv:2409.19953].
3. M. Najafizadeh, *Carroll–Schrödinger equation as the ultra-relativistic limit of the tachyon equation*, *Sci. Rep.* **15**, 13884 (2025), [arXiv:2403.11212].
4. K. Koutrolikos, M. Najafizadeh, *Super-Carrollian and Super-Galilean Field Theories*, *Phys. Rev. D* **108**, no. 125014 (2023), [arXiv:2309.16786].
5. M. Najafizadeh, *Massive to massless by applying a nonlocal field redefinition*, *Phys. Rev. D* **107**, no. 045008 (2023), [arXiv:2212.07042].
6. M. Najafizadeh, *Off-shell supersymmetric continuous spin gauge theory*, *JHEP* **038**, 02 (2022), [arXiv:2112.10178].
7. M. Najafizadeh, *Unconstrained massless higher spin supermultiplet in AdS_4 spacetime*, *Phys. Rev. D* **105**, no. 025001 (2022), [arXiv:2012.15580].
8. M. Najafizadeh, *Supersymmetric continuous spin gauge theory*, *JHEP* **027**, 03 (2020), [arXiv:1912.12310].
9. M. Najafizadeh, *Local action for fermionic unconstrained higher spin gauge fields in (A)dS spacetimes*, *Phys. Rev. D* **98**, no. 125012 (2018), [arXiv:1807.01124].
10. X. Bekaert, J. Mourad, M. Najafizadeh, *Continuous-spin field propagator and interaction with matter*, *JHEP* **113**, 11 (2017), [arXiv:1710.05788].
11. M. Najafizadeh, *Modified Wigner equations and continuous spin gauge field*, *Phys. Rev. D* **97**, no. 6, 065009 (2018), [arXiv:1708.00827].
12. X. Bekaert, M. Najafizadeh, M. R. Setare, *A gauge field theory of fermionic continuous-spin particles*, *Phys. Lett. B* **760** (2016) 320-323, [arXiv:1506.00973].
13. M. Najafizadeh, Mehdi Saadat, *Thermodynamics of Classical Systems on Noncommutative Phase Space*, *Chin. J. Phys.* **51**, no.1, 94 (2013), [arXiv:1108.4273].

PRESENTATIONS

International

- *Classification of Conformal Carroll Algebras*, Poster presentation at Strings 2025 conference, New York University, Abu Dhabi, UAE (Jan. 2025).
- *Off-shell supersymmetric continuous spin gauge theory*, Center for Theoretical Physics, Tomsk State Pedagogical University, Tomsk, Russia (July 2023) [[online](#)].
- *Supersymmetric continuous spin gauge theory*, Brown Theoretical Physics Center (BTPC) Lunch IDEA Series, Department of Physics, Brown University, Providence, USA (April 2021) [[online](#)].
- *Introduction to continuous-spin particles*, Laboratoire de Mathématiques et Physique Théorique, Université de Tours, Tours, France (Dec. 2016).

National

- *Post-Carrollian Mechanics and Gravity*, School of Physics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (Oct 2025).
- *Carroll Fermions and Supersymmetry*, School of Particles and Accelerators, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (Jan 2024).
- *Massive to massless by applying a nonlocal field redefinition*, 30th IPM Physics Spring Conference, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (May 2023).
- *Massive to massless by applying a nonlocal field redefinition*, School of Physics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (Feb. 2023).
- *Supersymmetric continuous spin gauge theory*, 27th IPM Physics Spring Conference, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (June 2020) [[online](#)].
- *Higher spin and continuous (infinite) spin gauge field theories*, School of Particles and Accelerators, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (May 2019).
- *Local action principle for unconstrained higher spin gauge fields*, School of Physics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (Nov. 2018).
- *Interactions of continuous spin particle (CSP) with matter*, 25th IPM Physics Spring Conference, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (June 2018).
- *Recent advances in the theory of continuous-spin particle*, School of Physics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (Oct. 2017).
- *Continuous-spin particles*, School of Physics, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran (Sep. 2016).

CONFERENCES ATTENDED

International

- *Strings 2025 conference*, New York University, 6 - 10 January 2025, Abu Dhabi, UAE.
- *International Conference “Quantum Field Theory and Gravity (QFTG’23)”,* Center for Theoretical Physics, Tomsk State Pedagogical University (online participant), 10 - 14 July 2023, Tomsk, Russia.
- *Workshop on “Higher spins and holography”*, Erwin Schrödinger Institute (ESI), 11 March - 5 April 2019, Vienna, Austria.
- *The Spring School on “Superstring Theory and Related Topics”*, International Center for Theoretical Physics (ICTP), 16 - 24 March 2017, Trieste, Italy.

National

- *The 30th IPM Physics Spring Conference*, Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 17 - 18 May 2023.
- *The 13th Conference on Particle Physics and Fields*, Ferdowsi University of Mashhad (FUM), Mashhad, Iran, 07 - 08 Feb. 2023.

- [Iranian Conference on High Energy Physics](#), Institute of Theoretical Physics and Mathematics (IPM), Tehran, Iran, 08 - 10 Nov. 2021.
- [The 27th IPM Physics Spring Conference](#), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 24 - 25 June 2020.
- [Recent Trends in String Theory and Related Topics](#), Institute of Theoretical Physics and Mathematics (IPM), Tehran, Iran, 21 - 25 April 2019.
- [The 25th IPM Physics Spring Conference](#), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 20 - 21 June 2018.
- [Recent Trends in String Theory and Related Topics](#), Institute of Theoretical Physics and Mathematics (IPM), Tehran, Iran, 7 - 11 May 2018.
- [The 20th IPM Physics Spring Conference](#), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 22 - 23 May 2013.
- [The 19th IPM Physics Spring Conference](#), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 16 - 17 May 2012.
- [The 18th IPM Physics Spring Conference](#), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 18 - 19 May 2011.
- [The 15th IPM Physics Spring Conference](#), Institute for Research in Fundamental Sciences (IPM), Tehran, Iran, 14 - 15 May 2008.

TEACHING EXPERIENCE

- Lecturer, teaching *Electricity & Magnetism Physics, General Mathematics, General Physics, Applied Physics, Applied Mathematics, Electricity & Magnetism Physics Lab.* at University of Applied Science and Technology, Tehran, Iran (2009-2011).
- Teacher Assistant, *Advanced Quantum Mechanics II*, Tarbiat Modares University, spring 2008.
- Teacher Assistant, *Advanced Quantum Mechanics I*, Tarbiat Modares University, fall 2007.

REFERENCE

- [Hamid Reza Afshar](#) (Ph.D. supervisor)
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