

Ardeshir Rabeie

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Physics Department

School of Science

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Qualifications

BSC: Applied physics, Ferdowsi university, Mashhad, Iran, 1992

MSc: Physics, Isfahan university of technology, Isfahan, Iran, 1995

PhD: Physics, Marne La Vallee, Paris, French, 2005

Research interests

- Coherent states and applications in physics
- Group theory and its applications in physics
- Quantization on de- Sitter space
- Wavelet
- Quantum information

Past experiences

- Responsible of Modern Physics Laboratory of Razi university 1996 - 2001.
- Being the Member of solar eclipse association that observes the latest solar eclipse of the 20th century (1999).
- Being the member of Iranian physics association.
- The head of physics department 2008-2012 and 2014-2016.

BSc courses

Physics 1, 2, 3

Electromagnetism 1,2

Analytical mechanics 1, 2

Mathematical physics 1

Waves

Reactor physics 1

Special relativity

MSc courses

Group theory

General relativity

Special topics

Gravitation 1

Advanced Electrodynamics1

Dark matter and dark energy

Phd courses

Special topics in physics

Special issues in mathematical physics

Publications and conference proceedings

1-A. Rabeie, E. Huguet, J. Renaud, Wick ordering for coherent state quantization in $1 + 1$ de Sitter space, Physics Letters A, 370, 123-126 (2007).

2- A. Rabeie, Z. Jalilian, Comment on “Coherent states on spheres” [J. Math. Phys.43, 1211 (2002)], Journal of Mathematical Physics, 52, 084101 (2011).

3- A. Rabeie, Quantum physics of an elementary system in de Sitter space, Eur. Phys. J. C (2012) 72:2135.

4- A. Rabeie, S. Rezaei, Quantum dynamic of massive particle on $1+3$ De Sitter space-time, IJPR, Vol. 12, No. 2, 157-161 (2012).

5- A. Rabeie , A.Fatahizadeh, The study of entanglement and teleportation of the harmonic oscillator bipartite coherent states, IJPR, 14, 381-386 (2014)

6- M. Aghaee, A. Rabeie, M. V. Takook, Two and three particles entanglement; helicity and spin with momentum, J Theor Appl Phys, 6, 1-6 (2017)

7- M. Aghaee, M.V.Takook, A. Rabeie, The Relativistic Effects on the Violation of the Bell's Inequality for Three Qubit W State, Journal of Optoelectrical Nanostructures, 2, 71-81 (2017).

8-A. Fatahizadeh, A. Rabeie, Teleportation via an Entangled Coherent Channel and Decoherence Effect on This Channel, Journal of Optoelectrical Nanostructures, 4, 1-14 (2019).

- 9- S. Rezaei, A. Rabeie, Berezin's quantization approach for determining the ladder operators associated to a movement particle on the circle and sphere, IJPR, Vol. 21, No. 1, 181-187 (2021).
- 10- A. Rabeie, S. Rezaei, The Ladder Operators on $1 + 1$ -de Sitter Space, International journal of theoretical physics, Vol. 60, No. 10, 3850-3860 (2021).
- 11- A. Fatahizadeh, A. Rabeie, Discriminating between optical coherent superposition states with imperfect detection, IJPR, Vol. 22, No. 4, 723-730 (2023).
- 12- S. Rezaei, A. Rabeie, Photon -added Barut -Girardello coherent states for non-linear harmonic oscillator, Journal of Modern Research Physics, Vol. 1, No. 9, 35-43 (2025).
- 13- A. Rabeie, Infinitesimal generators and quantum operators in de Sitter space, Eur. Phys. J. C (2025) 85:626.
- 14- A. Rabeie, Quantum field theory on $1 + 3$ -de Sitter space: annihilation and creation operators, Eur. Phys. J. C (2025) 85:916.
- 15- A. Rabeie, Annihilation and Creation Operators in the Berezin-Thiemann Quantization Framework, International journal of theoretical physics, (2025) 64:288.
- 16- A. Rabeie, Quantum operators on $1+1$ -de Sitter space, International Journal of Geometric Methods in Modern Physics (2026) 2650136 (13 pages).
- 17- A. Rabeie, Determination of infinitesimal generators on de Sitter space-time, Transactions in Theoretical and Mathematical Physics, Vol. 1, No. 3, 72-76 (2024).
- 18- A. Rabeie, Investigation of Dense Coding with One of the Quasi-Bell States, Transactions in Theoretical and Mathematical Physics, Vol. 1, No. 4, 118-120 (2024).
- 19-A. Rabeie, N. Hatami Nasar, The quantization of classical observables on $1+1$ -De Sitter complex circle, Iranian Physics conference, 1368-1371 (2010).

20-A. Rabeie,Z. Jalilian, The quantization of observables on 1+2 De-Sitter space-time, Iranian Physics conference, 1364-1367 (2010).

21-A. Rabeie, S.A. Alenabi,Description of quantum physics on de-Sitter by using the heat, Iranian Physics conference, 132-135 (2014).

22-A. Rabeie, H. Oliaei moghaddam, A. Izadi Najafabadi, Wavelet transform and its application in EEG signal processing, Iranian Physics conference, 1236-1239 (2015).

23-H. Oliaei moghaddam, A. Rabeie, R. Fouladi,Approximate solution of the Practical differential equations in physics, Iranian Computational Physics conference, 238-241 (2016)

24- A. Rabeie, Creation and annihilation operators on de Sitter manifold, The 5st Seminar on Harmonic Analysis and Applications (2017).

25- A. Rabeie, H. Oliaei Moghaddam, Wavelet in study of pleasant and unpleasant thoughts, Iranian Physics conference, 538-541 (2020).

26- A. Rabeie, Determination of infinitesimal generators on de Sitter space-time, 8th Iranian Conference on Mathematical Physics, 13-16 (2024).

27- A. Rabeie, A. Fatahizadeh, Investigation of dense coding with quasi-Bell states, 8th Iranian Conference on Mathematical Physics, 33-35 (2024).

28- A. Rabeie, S. Rezaei, Barut-Girardello coherent states for non-linear harmonic oscillator, Iranian Physics conference, 639-642 (2024).

29- A. Rabeie, M. Saidy Sarjubi, Determination of coherent states for Hydrogen atom by group theory, The first Annual Conference, Razi University (2010).

30- A. Rabeie,Quantization of classical observables on de-Sitter space by coherent states method's, Sixth National conference on cosmology, Sharif university of technology (2006)

31- A. Rabeie, Ordering algebra for quantization in 1+1-De Sitter space, National Conference on Gravitation and Cosmology, Tehran university (2007).

Msc graduated students under my supervision

1-Nasim Keshavarz, Quantization of the massive particle motion on 1+1-De Sitter space-time (2008)

2-Zeinab Jalilian, Coherent states quantization (2009)

3-Neda Hatami Nasar, The quantization of classical observables on 1+1 De Sitter complex circle (2009)

4-Sodabe Rezaei, The quantization of classical observables on 1+3 de Sitter space (2010)

5-Maryam Saidy, Coherent states of Hydrogen atom (2010)

6-Elahe Naderi, Effect of magnetic field on coherent state (2011)

7-Neda Aghaie, Coherent states for compact groups (2011)

8-Asieh Izadi Najafabadi, The construction of fuzzy $\mathbb{R}^4$ de Sitter using coherent States (2012)

9-Ardalan Fatahizadeh, Coherent states in quantum information (2012)

10-Mahya Sonboli, Coherent states of group $SL(2, \mathbb{C})$ (2013)

11-Ali Asghar Alenabi, Constraction of coherent states by heat kernel (2013)

12-Roya Famili, Coherentstates and quantization of particle in quantum Well (2014)

13-Hamidreza Oliaei moghaddam, The world of wavelets and some of its Applications (2014)

14-Sohayla Elyasi, Study of free quantum particle by coherent states method (2015)

15-Azadeh Niyazi, Quantum information under Lorentz transformation (2015)

16-Shahla Jozi, Coherent quantization of angle, time and more irregular functions (2016)

17-Somayeh Shekarbayghi, Squeezed light and coherent states (2019)

18-Shabnam Sohrabi, Coherent-States Qubits: Entanglement and Decoherence (2019)

19- Tayebe Najafi, Coherent states for a relativistic scalar particle (2020)

20- Tayebe Ahani, Coherent states in quantum process tomography (2020)

Phd graduated students under my supervision

- 1- Mohsen Aghaee, Helicity States Entanglement in Two & Three Particles Systems (2017).**
- 2- Soudabe Rezaei, The determination of Annihilation and Creation operators for some physical systems by Berezin quantization method (2022)**
- 3- A. Fatahizadeh, Teleportation via two quasi Bell channel and decoherence effect on this channels (2022)**

Referee of some journals

- 1- International journal of theoretical physics**
- 2- Journal of Physics Communications**
- 3- Classical and Quantum Gravity**

Hobbies

Football player (good level)

Music (Iranian folkloric)