Davood Afshar

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Faculty of Science
Shahid Chamran University of Ahvaz,
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Personal information

Birth date: July 21, 1972

Birth place: Abadan, IRAN

Nationality: Iranian

Education

BSc of applied physics: October 1994–July 1998, Shahid Chamran University, Ahvaz, IRAN

MSc of physics: October 1998– July 2001, Shahid Chamran University, Ahvaz, IRAN

Thesis: Squeezed states and their application in finding the energy levels of quantum anharmonic oscillators

PhD of physics: February 2003– July 2008, Shahid Chamran University, Ahvaz, IRAN

Thesis: A study of the quantum anharmonic oscillators

Employment

Associate professor in physics, Shahid Chamran University of Ahvaz, Ahvaz, IRAN

Professional interests

Research

Teaching

Courses taught

PhD

Advanced topics in group theory

Quantum field theory

Special topics

MSc

Theoretical foundations of quantum mechanics

Philosophical foundations of quantum mechanics

Advanced quantum mechanics (1)

Advanced quantum mechanics (2)

Special topics

Seminar and research method

Advanced elementary particle physics (1)

Quantum fields theory (1)

BSc

Elementary particle physics

History and Philosophy of Science

History of physics

Philosophical foundations of quantum mechanics

Quantum mechanics (1)

Quantum mechanics (2)

Mathematical physics (1)

Special relativity

Project

Fundamental of physics (1)

Fundamental of physics (2)

General physics

Laboratory of physics (1) & (2)

Research interests

Quantum information

Quantum optics

Supersymmetry

Research papers

1) D. Afshar, F. Abbasnezhad, S. Mehrabankar and A. Isar; Two-mode Gaussian states as resource of secure quantum teleportation in open systems; Chin. J. Phys. **68** (2020) 419-425.

2) A. Motamedinasab, A. Anbaraki, D. Afshar and M. Jafarpour; New family of parasupercoherent states: entanglement, uncertainties and statistical properties; Can. J. Phys. **98** (2020) 953–958.

3) A. Anbaraki, D. Afshar and M. Jafarpour; Entangling two separable qubits using an entangled field state; Optik **201** (2020) 163539.

4) A. Naji, R. Hamzehofi and D. Afshar; Entanglement teleportation via two-qubit Heisenberg interaction in Jaynes-Cummings model under intrinsic decoherence; Iran. J. Phys. Res. **19** (2019) 656-656.

5) F. Abbasnezhad, D. Afshar and M Jafarpour; Steering evolution of two-mode Gaussian states in noisy environments; Int. J. Quantum Inf **17** (2019) 1950030.

6) S. Mehrabankar, D. Afshar and M. Jafarpour; Quantum fidelity evolution of penning trap coherent states in an asymmetric open quantum system; Quantum Inf Comput **19** (2019) 413-423.

7) S. Hesabi, D. Afshar; Non-Markovianity of a Gaussian quantum Brownian motion channel using generalized LFS and Gaussian interferometric power measures; Eur. Phys. J. D **73** (2019) 34.

8) S. Hesabi, D. Afshar and M. G. A. Paris; Non-Markovian evolution of a two-level system interacting with a fluctuating classical field via dipole interaction; Optics Communications **437** (2019) 377-381.

9) F. Abbasnezhad, S. Mehrabankar, D. Afshar and M. Jafarpour; Markovian thermal evolution of entanglement and decoherence of GHZ state; Eur. Phys. J. Plus **133** (2018) 298.

10) A. Anbaraki, D. Afshar and M. Jafarpour; Non-classical properties and polarization degree of photon-added entangled nonlinear coherent states; Eur. Phys. J. Plus **133** (2018) 2-1–11.

11) A. Motamedinasab, D. Afshar and M. Jafarpour; Entanglement and non-classical properties of generalized supercoherent states; Optik **157** (2018) 1166–1176.

12) D. Afshar, A. Anbaraki, and M. Jafarpour; Entanglement transfer from entangled non-linear coherent states of trapped ions to separable qubits; Optics Communications **402** (2017) 80–84.

13) A. Anbaraki, D. Afshar and M. Jafarpour; Entanglement transfer from entangled nonlinear coherent states to separable qubits; J. Opt. Soc. Am. B **34** (2017) 1366-1373.

14) F. Abbasnezhad, S. Mehrabankar, D. Afshar and M. Jafarpour; Evolution of quantum correlations in the open quantum systems consisting of two coupled oscillators; Quantum Inf Process **16** (2017) 103-1–17.

15) A. Anbaraki, D. Afshar and M. Jafarpour; Entangled nonlinear coherent states of trapped ion motion and their non-classical properties; Optik **136** (2017) 36–43.

16) M. Jafarpour, F. Kazemi Hasanvand and D. Afshar; Dynamics of entanglement and measurement-induced disturbance for a hybrid qubit-qutrit system interacting with a spin-chain environment: A mean field approach; Commun. Theor. Phys. **67** (2017) 27–32.

17) D. Afshar and A. Anbaraki; Nonclassical properties and entanglement of superposition of two-mode separable nonlinear coherent states; J. Opt. Soc. Am. B **33** (2016) 558-565.

18) D. Afshar, S. Mehrabankar, and F. Abbasnezhad; Entanglement evolution in the open quantum systems consisting of asymmetric oscillators; Eur. Phys. J. D **70** (2016) 64-1–8.

19) D. Afshar, A. Motamedinasab, A. Anbaraki and M. Jafarpour; Even and odd coherent states of supersymmetric harmonic oscillators and their nonclassical properties; Int. J. Mod. Phys. B **30** (2016) 1650026.

20) M. Jafarpour, S. Ghanavati and D. Afshar; Entanglement distribution in a two-dimensional 5-site frustrated J 1-J 2 spin system: Separable and globally entangled ground states; Int. J. Quant. Inf. **13** (2015) 1550047.

21) D. Afshar and M. Jafarpour; Anharmonic oscillators and generalized squeezed states; J. Phys. A: Math. Theor. **41** (2008) 304015.

22) D. Afshar and M. Jafarpour; Multi-photon coherent states via a Lie algebra method; Journal of Physics: Conference Series **128** (2008) 012020.

23) M. Jafarpour and D. Afshar; An approach to quantum anharmonic oscillators via Lie algebra; Journal of Physics: Conference Series **128** (2008) 012055.

24) M. Jafarpour and D. Afshar; Energy levels for the pure potentials; Journal of Sciences, Islamic Republic of Iran **18**(1) (2007) 75-81.

25) M. Jafarpour and D. Afshar; Calculation of energy eigenvalues for two-dimensional anharmonic oscillators; IL Nuovo Cimento B **120**(3) (2005) 335-344.

26) M. Jafarpour and D. Afshar; Calculation of energy eigenvalues for the quantum anharmonic oscillator with a polynomial potential; J. Phys. A **35** (2002) 87-92.

Research papers published in Persian

1. S. Mehrabankar, F. Abbasnezhad, D. Afshar and M. Jafarpour

The evolution of entanglement and decoherence of basset-hound states in an asymmetric three-mode open system

Journal of Research on Many-body Systems, **7** (13) (2017) 17-26.

2. D. Afshar and M. Jafarpour

Energy eigenvalues for quartic, sextic, octic and decatic anharmonic oscillators

*Shahid Chamran University journal of science (section A) **10** (2003) 30-43.*

Books

A. Akhound and D. Afshar

Quantum Mechanics 1 (in Persian)

Payamenoor University press, Tehran, first edition 2010, second edition 2011.

Honors

Outstanding educational teacher, Shahid Chamran University of Ahvaz, Ahvaz, IRAN, May 2019

Young researcher, Shahid Chamran University, Ahvaz, IRAN, December 2005

Top PhD student, Shahid Chamran University, Ahvaz, IRAN, December 2006