# Resume

## Personal Infromation

Name: Akbar

Last Name: Jahan

Date of Birth: 8 January 1979

Nationality: Iran

## Academic Education

- B. Sc. (1997 - 2001): Uinversity of Orumieh – Solid State Physics, Orumieh, Iran
- M. Sc. (2002-2005): Uinversity of Orumieh – Theoretical Physics, Orumieh, Iran
- Ph. D. (2007-2011): Amirkabir University of Technology – Theoretical Physics, Tehran, Iran

## Dissertations

- M. Sc: Non-relativistic Quantum Fields in Noncommutative Spaces

- Ph. D: Schwinger Effect in D-branes

## Current Academic Possition

Assistant Professor, Research Institute for Astronomy and Astrophysics of Maragha (RIAAM), Iran.

## Fields of Interest

- Quantum field theory
- Classical and quantum cosmology
- String\M-theory
- Stellar physics
- Celestial dynamics

## Contact Info

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## Lectures

- *Introduction to general relativity and gravitation*: 6$^{th}$ advanced workshop in astrophysics, RIAAM, Maragheh, Iran (August 2012).
- *Classical and quantum cosmology of superstring theory*: 7$^{th}$ advanced workshop in astrophysics, RIAAM, Maragheh, Iran (August 2013).

- *Introduction to Quantum Cosmology*, 8th workshop in astrophysics, RIAAM, Maragheh, Iran (August 2015).

## Teaching

- Advanced quantum mechanics (graduate course)
- General relativity & Gravitation (graduate course)
- Mathematical physics

## My former and Current Students

1. Mr. Babak Nadiri-Niri (PhD)
2. Mr. Hamed Sarvari-Karaj Abad (Msc)
3. Mr. Hossein Shamsollahi (Msc)
4. Mr. Hadi Beig-Mirzaei (Msc)

## Publications

[1] **A. Jahan**, *Noncommutative Harmonic Oscillator: A Path Integral Approach*, Braz. J. Phys **38** (2008) 144.

[2] **A. Jahan**, *Nonrelativistic Scalar Field on the Quantum Plane*, Phys. Lett. **B** 623 (2005) 179.

[3] **A. Jahan**, *Nonrelativistic Fermions in Noncommutative Space*, Europhys. Lett **78** (2007) 50001.

[4] **A. Jahan**, M. Nasseri and M. Jafari, *Noncommutative Nonrelativistic Fermions,* Mod. Phys. Lett **A 22** (2007) 2669.

[5] **A. Jahan** and M. Jafari, *Bound State Energy of Delta-Function: A New Regularization Scheme*, Iranian. J. Sci. Technol. **A 31** (2007) 435.

[6] M. Nasseri, **A. Jahan** and M. Souri, *U(1) Gauge Field in 6D Space-Time with Compact Noncommutative Dimensions: A Coherent State Approach*, Fizika **B 17** (2008) 447.

[7] **A. Jahan,** *Path Integral Formulation of Sigma Model with Noncommutative Field Space*, Fizika **B 18** (2009) 189.

[8] I. Jabbari, **A. Jahan** and Z. Riazi, *Partition Function of a Harmonic Oscillator on the Noncommutative Plane,* Turk. J. Phys **33** (2009) 149.

[9] **A. Jahan,** *One Loop Vacuum Energy in Non-parallel D1-Branes: A Path Integral Formulation,* Mod. Phys. Lett **A 25** (2010) 619.

[10] **A. Jahan,** *Path Integral Approach to Fermionic Vacuum Energy in Non-parallel D1-Branes,* Mod. Phys. Lett **A 25** (2010) 2763.

[11] **A. Jahan** and D. Kamani, *Schwinger Effect in Non-parallel D1-branes*: *A Path Integral Approach*, Int. J. Mod. Phys. **A 25** (2010) 4301.

[12] **A. Jahan** and Parvishi, *Scalar-Graviton Scattering in Noncommutative Space and Deformed Newton Gravity*, Rom. J. Phys **56** (2011) 851.

[13] K. Farhoodi, M. Moghise and **A. Jahan**, *On the string pair creation in Dp-Dp' brane system*, Mod. Phys. Lett **A 26** (2011) 215.

[14] **A. Jahan**, *Cosmological implications of a Lorentz invariance violating O(2) model*, Rom. J. Phys **58** (2013) 86-91.

[15] **A. Jahan** and N. Sadeghnezhad, *Gravitational Radiation in Noncommutative Gravity,* Rom. J. Phys **58** (2013).

[16] **A. Jahan,** *On Gravitational Radiation by a Quantum Bound System,* Gen. Rel. Grav. **45** (2013). Doi: 10.1007/s10714-013-1562-5.

[17] A. Ajabshirizadeh, **A. Jahan** and B. Nadiri Niri, *Graqvitational Bremsstrhlung in R^2 Gravity,* Mod. Phys. Lett. **A 29**, (2014) 1450145. Doi: 10.1142/S0217732314501454.

[18] **A. Jahan**, *Gravitational Bremsstrahlung in Horava Gravity*, U.P.B. Sci. Bull. **A77** (2015) 307.

[19] H. Sarvari and **A. Jahan**, *Anharmonic Noncommutative Oscillator at Finite Temperature*, U.P.B. Sci. Bull., Series **A 78** (2016) 283.

[20] R. Heidarnia, H. Shamsollahi, **A. Jahan** and H. Ebadi, *The First Photometric Study of Semi-detached Eclipsing Binary V504 Cyg*, New Astronomy **50** (2016) 25.

[21] H. Shamsollahi, **A. Jahan** and R. Heidarnia, *Photometric Study and Light Curve Analysis of Eclipsing Binary V2480 Cyg*, submitted to New Astronomy.

[22] B. Nadiri, **A. Jahan** and C. Corda, *Gravitational Luminosity of a Hot Plasma in R^2 Gravity,* submitted to PRD, https://arxiv.org/abs/1609.09784.

[24] H. Moradpour, N. Sadeghnezhad, S. Ghaffari and A. Jahan, *Thermodynamic analysis of gravitational field equations in Lyra manifold*, AHEP **2017** (2017),https://doi.org/10.1155/2017/9687976.

[25] A. Jahan, B. Nadiri and H. Sarvari, *Multipolar graviton in the hydrogen atoms,* to appear in Gravitation & Cosmology.

## Current Research Program

Possible applications of Schwinger's action principle in quantum gravity and superstring theory.

## Citations

[1] M. L. Liang, R. L. Yang, *Motion of Charged Particle in Electric and Magnetic Fields in 3D Noncommutative Spaces and Related Problems*, Braz. J. Phys **41** (2011) 290–296.

[2] M. J. Neves, E. M. C. Abreu, *Path integral formalism in a Lorentz invariant noncommutative space*, arXiv: 1206.4065.

[3] M. J. Neves, E. M. C. Abreu, *Some aspects of quantum mechanics and field theory in a Lorentz invariant noncommutative space,* arXiv: 1212.4118.

[4] B. Charneski, A. F. Ferrari, M. Gomes, *The three-dimensional noncommutative Gross-Neveu model*, J. Phys. **A40** (2007) 3633-3642.

[5] M. A. Anacleto, J. R. Nascimento, A. Yu. Petrov, *Aharonov-Bohm Effect on Noncommutative Plane: A Coherent State Approach,* Phys. Lett. **B637** (2006) 344-349.

[6] S. A. Alavi, S. Abbaspour, *Dynamical noncommutative quantum mechanics*, arXiv: 1304.6160.

[7] E. M. C. Abreu, M. J. Neves, *Self-quartic interaction for a scalar field in an extended DFR noncommutative space–time*, Nucl. Phys. B884 (2014) 741.

[8] S. Heydarnezhad, *BREMSSTRAHLUNG IN NONCOMMUTATIVE QUANTUM MECHANICS,* Rom. J. Phys. **59** (2014) 500.

[9] L Mai-Lin, Z Ya-Bin, Y Rui-Lin and Z Fu-Lin, *Dirac equation with a magnetic field in 3D non-commutative phase space,* Chinese. Phys. **C37** (2013) 063106.

[10] Kh. Gnatenko, *Composite system in noncommutative space and the equivalence principle,* Phys. Lett **A377** (2013) 3061.

[11] S. Heydarnezhad, M. Soudmand, *Degeneracy Pressure of Noncommutative Fermions,* Mod. Phys. Lett. **A30** (2015) 1550029.

[12] Kh. Gnatenko*, ESTIMATING THE UPPER BOUND OF THE PARAMETER OF NONCOMMUTATIVITY ON THE BASIS OF THE EQUIVALENCE PRINCIPLE*, J. Phys. Stud. **17** (2013) 4001.

[13] J. Naji, S. Heydari, and R. Darabi, *Twisted Conformal Algebra and Quantum Statistics of Harmonic Oscillators*, Adv. Math. Phys (2014) 4. http://dx.doi.org/10.1155/2014/103675.

[14] H. Benzair, M. Merad, T. Boudjedaa and A. Makhlouf, *Relativistic Oscillators in a Noncommutative Space: a Path Integral Approach*, Zeitschrift für Naturforschung **A67** (2014) 77.

[15] W. Chung, *Two-dimensional noncommutative quantum mechanics with the central potential,* Mod. Phys. Lett **A31** (2016) 1650046.

[16] S. Alavi and M. Amiri-Nasab, *Gravitational radiation in dynamical noncommutative spaces.* http://arxiv.org/abs/1512.08236.

[17] A. Benchikha and M. Merad, *Energy-dependent harmonic oscillator in noncommutative space: A path integral approach*, Int. J. Mod. Phys. **A 32** (2017) 1750194.

[18] A. Benchikha, M. Merad, and T. Birkandan, *Energy-dependent harmonic oscillator in noncommutative space*, Mod. Phys. Lett. **A 32** (2017) 1750106.

[19] A. Maireche, *Effects of Two -Dimensional Noncommutative Theories on Bound States Schrödinger Diatomic Molecules under New Modified Kratzer-Type Interactions*, *International Letters of Chemistry,* Physics and Astronomy **76** (2017) 1. Doi: 10.18052/www.scipress.com/ILCPA.76.1

[20] Mario J. Neves and Everton M. C. Abreu, *The standard electroweak model in the noncommutative DFR space–time*, Int. J. Mod. Phys. **A32** (2017) 1750190. https://doi.org/10.1142/S0217751X17501901

[21] A. Maireche, *A New Relativistic Study for Interactions in One-electron atoms (Spin ½ Particles) with Modified Mie-type Potential*, JOURNAL OF NANO-AND ELECTRONIC PHYSICS **8** (2016) 04027.

[22] A. Maireche, *A New Nonrelativistic Atomic Energy Spectrum of Energy Dependent Potential for Heavy Quarkouniom in*

*Noncommutative Spaces and Phases Symmetries*, JOURNAL OF NANO-AND ELECTRONIC PHYSICS **8** (2016) 02046.

[23] A. Maireche, *A New Theoretical Study of Quantum Atomic Energy Spectra for Lowest Excited States of Central (PIHOIQ) Potential in Noncommutative Spaces and Phases Symmetries at Plan's and Nanoscales*, JOURNAL OF NANO-AND ELECTRONIC PHYSICS **8** (2016) 02027.