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Amin Rezaei Akbarieh

Job Experience

Assistant professor.

- Faculty of physics, University of Tabriz, Iran, 2015-present

Researcher.

- School of Physics, IPM, Tehran, Iran, 2011-2015.

Education

Ph.D. (Particle physics and cosmology)

Sharif University of Technology, Tehran, Iran (2011 – 2015)

Thesis title: Vector dark matter

Thesis Grade: Excellent

Overall GPA: 19.59/20

M.Sc. (Theoretical physics)

University of Tabriz, Iran, (2009 – 2011)

Thesis title: Noncommutative quantum mechanics

Overall GPA: 19.51/20

B.S. (Theoretical physics)

University of Tabriz, Iran, (2005– 2009)

Thesis title: Nikiforov-Uvarov method in Quantum mechanics

Overall GPA: 18.30/20

Research Interests

- Cosmology (Dark energy, Inflation, Modified gravity)
- Gravity (Black holes, Gravitational waves)
- Particle physics (Dark matter, Neutrino physics)
- Quantum information

Publications

- Kucukakca, Y. and Akbarieh, A.R., 2020. Noether symmetries of Einstein scalar field cosmology. *The European Physical Journal C*, 80(11), pp.1-10.
- Mirzaei, S. and Akbarieh, A.R., 2020. Quantum Teleportation via Entangled Light in Schwarzschild Black Hole. *International Journal of Theoretical Physics*, 59(11), pp.3583-3592.
- Akbarieh, A.R., Ahmadi, M., Izadi, Y., Asmarand, S.M. and Miller, W.F. Evolution of spherical overdensity in Chaplygin gas model. *The European Physical Journal C*, 80, pp.1-11.
- Akbarieh, A.R. and Izadi, Y., 2019. Tachyon inflation in teleparallel gravity. *The European Physical Journal C*, 79(4), pp.1-8.
- Motavalli, H. and Akbarieh, A.R., 2018. Teleparallel gravity with scalar fields. *Astrophysics and Space Science*, 363(10), pp.1-7.
- Motavalli, H., Akbarieh, A.R. and Nasiry, M., 2016. Dark energy cosmology with tachyon field in teleparallel gravity. *Journal of Experimental and Theoretical Physics*, 123(1), pp.33-39.
- Ezzatpour, S. and Akbarieh, A.R., 2016. Analytical solution of the Klein-Gordon equation for a quadratic exponential-type potential. *Journal of the Korean Physical Society*, 69(1), pp.1-5.
- Motavalli, H., Akbarieh, A.R. and Nasiry, M., 2016. Kantowski–Sachs cosmological solutions in the generalized teleparallel gravity via Noether symmetry. *Physics Letters A*, 31(15), p.1650095.
- Zeynizadeh, S. and Akbarieh, A.R., 2015. Higgs inflation and general conditions. *The European Physical Journal C*, 75(8), pp.1-6.
- Farzan, Y. and Akbarieh, A.R., 2014. Decaying vector dark matter as an explanation for the 3.5 keV line from galaxy clusters. *Journal of Cosmology and Astroparticle Physics*, 2014(11), p.015.
- Farzan, Y. and Akbarieh, A.R., 2013. Natural explanation for 130 GeV photon within vector boson dark matter model. *Physics Letters B*, 724(1-3), pp.84-88.
- Farzan, Y. and Rezaei Akbarieh, A., 2012. VDM: a model for vector dark matter. *Journal of Cosmology and Astroparticle Physics*, 2012(10), p.026.
- Motavalli, H. and Akbarieh, A.R., 2011. Generalized Spiked Harmonic Oscillator in Non-commutative Space. *International Journal of Theoretical Physics*, pp.2673-2678.
- Motavalli, H., Akbarieh, A.R. and Parhizkar, M., 2011. Analytical Solution of Klein-Gordon Equation in Cosmology. *International Journal of Theoretical Physics*, 50(8), pp.2333-2344.
- Motavalli, H. and Akbarieh, A.R., 2010. Klein–Gordon equation for the potential in noncommutative space. *Modern Physics Letters A*, 25(29), pp.2505-2514.
- Motavalli, H. and Akbarieh, A.R., 2010. Factorization method and special functions. *International Journal of Theoretical Physics*, 49(9), pp.2074-2079.
- Motavalli, H. and Akbarieh, A.R., 2010. Exact solutions of the Klein-Gordon equation for the scarf-type potential via Nikiforov-Uvarov method. *International Journal of Theoretical Physics*, 49(5), pp.979-987.
- Rezaei Akbarieh, A. and Motavalli, H., 2009. The Klein-Gordon Equation with Coulomb Potential in Non-commutative Space. *arXiv e-prints*, pp.arXiv:0911.0001.

- Rezaei Akbarieh, A. and Motavali, H., 2008. EXACT SOLUTIONS OF THE GORDON EQUATION FOR THE ROSEN–MORSE TYPE POTENTIAL/NIKIFOROV–UVAROV METHOD. *Modern Physics Letters A*, 23(35), pp.301

Honors and Awards

Title of Award, Medal, Position	Issuing Authority	Country	Year
Ranked first in regional (Northwest of Iran) Olympiad for physics students	Minister of Science: Dr. Zahedi	Iran	2008- University of Tabriz
Ranked 12 th in national Olympiad for physics students	Minister of Science: Dr. Zahedi	Iran	2008- Shahid Beheshti University

Teaching Experience

Title of Course	Level	Name of Institution
Cosmology	Ph.D.	University of Tabriz
General relativity	Ph.D.	University of Tabriz
Field theory I, II	Ph.D.	University of Tabriz
Quantum cosmology	Ph.D.	University of Tabriz
Advanced particle physics	M.Sc.	University of Tabriz
Relativistic quantum mechanics	M.Sc.	University of Tabriz
Cosmology I	M.Sc.	University of Tabriz
Classical mechanics I	B.Sc.	University of Tabriz
Classical mechanics II	B.Sc.	University of Tabriz
Fundamental physics I, II	B.Sc.	University of Tabriz, Farhangian University
Electromagnetic I	B.Sc.	University of Tabriz, Farhangian University
Electromagnetic II	B.Sc.	University of Tabriz, Farhangian University
Math physics I, II, III	B.Sc.	University of Tabriz, Farhangian University
Quantum mechanics I, II	B.Sc.	University of Tabriz
Modern physics	B.Sc.	Farhangian University

Selective Papers Presented at National and International Scientific Assemblies:

Title of Paper	Title and Place of Assembly	Date
Cosmological spherical collapse in the framework of the Chaplygin gas model	APS April Meeting	2020
Observational and theoretical status of tachyon inflation in teleparallel gravity	APS April Meeting	2019
Higgs inflation and general initial conditions	6 th workshop and seminar on Topics in Theoretical physics (Azarbaijan Shahid Madani University)	2018
Decaying Vector Dark Matter as an Explanation for the 3.5 keV Line from Galaxy Clusters	5 th workshop and seminar on topics in theoretical physics (Azarbaijan Shahid Madani University)	2017
Self-Interaction Light Vector Dark Matter	IPM school and conference on Particle Physics (IPP15): Neutrino physics, dark matter and B-physics	2015
Natural explanation for 130 GeV photon line within vector boson dark matter model	IPM international school and workshop on Particle Physics (IPP13): Flavor physics and dark matter	2013
Vector Boson as a Dark Matter	IPM international school and workshop on Particle Physics (IPP12): Neutrino Physics and Astrophysics	2012
Noncommutative Spiked Harmonic Oscillator	16th Spring Physics Conference of IPM, Tehran, Iran	2009

Administrative Positions

Job Title	Place of Work	Date		Name of Institution
		From	To	
Executive Secretary of the Student Olympiad of Northwestern Iranian Universities	University of Tabriz	2017	-	University of Tabriz
Advisor in talented student center	University of Tabriz	2018	-	University of Tabriz

Advising and Mentoring for M.Sc. Students

Name	Title of thesis	Year
Mehdi Azizan	Tensor perturbations in tachyonic massive gravity	2021
Razi Seraty Oskouyi	Horndeski theory in modified gravity	2020
Nasrin Eghbali	Scrutiny of F(R,T) cosmology via Noether symmetry approach	2020
Amir Mohamadiyan Khalifeh	Strong Interaction massive particles (SIMP) as a candidate of dark matter	2019
Ghazaleh Pashpour	Study of scalar-tensor gravity in phase space	2018
Ata Azizi	Phenomenology of dark matter by two higgs doublet models	2018
Behzad Mehrpour Azari	Study of higgs inflation	2018

Name	Title of thesis	Year
Mahdieh Amini	Noether symmetry in Gauss-Bonnet gravity	2021
Mina Hemmatjou	Extended gravity in curved and twisted space - time	2020
Masoud Ashtari	Spherical collapse of Chaplygin gas model	2020
Ayda Soltandoust	Conformal symmetry in teleparallel gravity	2019
Pouneh Safarzadeh	The thermodynamic of Schwarzschild black hole	2019
Mohammad Ahmadi	Study of structure formation in presence tachyonic field with coupled lagrangian F(Φ) R	2018
Maryam Nouri	Noether symmetry in nonlinear oscillatory systems	2018

Advising and Mentoring for Ph.D. Students

Name	Title of thesis	Year
Sobhan Kazempour Ishka	Massive gravity	2020-present

Name	Title of thesis	Year
Elham Nouri	Consideration of the non-canonical cosmological models with dynamical systems and Noether symmetry approach	2021
Behzad Tajahmad	Dynamical systems approach in extended gravity models	2021
Mahrouz Nasiri	Kantowski-Sachs model in the generalized teleparallel gravity via Noether symmetry	2016

Computer & Programming Skills

- MATHEMATICA (Professional)
- MAPLE (Professional)
- PHYTON (Intermediate)

Language Skills

- English (Fluent)
- Turkish (Native)
- Persian (Native)