

CURRICULUM VITAE

AHMADOV AZAR INSHALLA OGLU

Associate Professor Department of Theoretical Physics
Doctor of science, (2212.01-Theoretical Physics)

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PERSONAL DATA

Date of birth : 29.04.1964

Place of birth : Bilasuvar, Azerbaijan

EDUCATION AND ACADEMIC DEGREES OBTAINED

2016: D.Sc. (2212.01-Theoretical Physics) Baku State University, Baku

1996: Ph.D., "The Study of Inclusive and Exclusive Photoproductions of Hadrons in Some Modern Theories". "Theoretical and Mathematical Physics", Faculty of Physics, Baku State University.

From 1992 to 1995: postgraduate student, Department of Theoretical Physics, Faculty of Physics, BSU

1989: M. Sc. (with highest honors), Department of Theoretical Physics, Faculty of Physics, BSU

From 1982 to 1983 and from 1985 to 1989: student, Faculty of Physics, BSU

COMPLETE PROFESSIONAL BACKGROUND

From 26.10.2007 to present Associate Professor, Department of Theoretical Physics, BSU

From 11.2005 to present: Senior research scientist, Institute for Physical Problems, Baku State University, Baku

From 02.2019 to present: Head research scientist, Institute for Physical Problems, Baku State University, Baku

From 02.1990 to 11.2005: Senior research scientist, High Energy Physics Lab., BSU

PRESENT RESEARCH INTERESTS

Perturbative QCD, phenomenology of hadronic collisions, infrared renormalon and higher-twist effects in QCD, investigation of spin effects in various processes. SUSY phenomenology. LHC Physics. Holographic QCD. Ordinary and SUSY Quantum Mechanics

INTERNATIONAL CONFERENCES, SYMPOSIUMS

1. 07.07. 2019 - 13.07. 2019, The XXVIth International Conference on Integrable Systems and Quantum symmetries (ISQS-26)
2. 09.07.2018-13.07.2018, The 32nd International Colloquium on Group Theoretical Methods in Physics (Group32)
3. 05.06. 2017 - 11.06. 2017, The XXVth International Colloquium on Integrable Systems (ISQS-25), Prague Czech Republic
4. 3-10 August, 2016, 38-th International conference on High Energy Physics (ICHEP2016), Chicago - USA.
5. 14.06. 2016- 18.06. 2016, The XXIVth International Colloquium on Integrable Systems (ISQS-24), Prague
6. 22.06. 2015-28.06. 2015, The XXIIIth International Colloquium on Integrable Systems (ISQS-23), Prague

7. 2008, October, Ankara, Turkey, The fifth Eurasian Conference on Nuclear Science and its Application.
8. 2007, April, Tehran, Iran; IPM String School and Workshop
9. 2005, July, Nathiagali, Pakistan; 30th International Nathiagali Summer College on Physics
10. 2003, June–July, ICTP, Trieste, Italy; Summer School on Particle Physics
11. 2003, September–October, Anzali, Iran; IPM String School and Workshop
12. 2002, April, Shiraz, Iran; IPM String School and Workshop
13. 2002, July, Nathiagali, Pakistan; 27th International Nathiagali Summer College on Physics
14. 2000, July, Burban, Pakistan; 25th International Nathiagali Summer College on Physics
15. 1998, July, ICTP, Trieste, Italy; Summer School in HEP and Cosmology
16. 1997, July, Islamabad, Pakistan; 22nd International Nathiagali Summer College on Physics
17. 1995, September, Serpukhov, Russia; VI Workshop on High Energy Spin Physics
18. 1993, September, Serpukhov, Russia; V Workshop on High Energy Spin Physics
19. 1992, November, Tabriz, Iran; Regional Conference on Mathematics and Theoretical Phys
20. 1991, September, Serpukhov, Russia; IV Workshop on High Energy Spin Physics

LIST OF SELECTED PUBLICATIONS

1. C. Aydin, O. Uzun and **A. I. Ahmadov**. Direct rho meson production in proton- proton and proton-antiproton collisions.
Int. J. Mod. Phys. A. 37, No. 08, 2250042 (2022).
<https://doi.org/10.1142/S0217751X22500427>
2. Sh. M. Nagiyev, C. Aydin, **A. I. Ahmadov**, Sh.A.Amirova.
Exactly solvable model of the linear harmonic oscillator with a position-dependent mass under external homogeneous gravitational field.
The Eur. Phys. J. Plus 137, 540 (2022).
<https://doi.org/10.1140/epjp/s13360-022-02715-6>
3. M. Abu-shady, **A. I. Ahmadov**, H. M. Fath-Allah and V. H. Badalov.
Spectra of Heavy Quarkonia in a Magnetized-Hot Medium in the Framework of Fractional Model Non-relativistic Quark Model
Arxiv: [hep-ph] 2105.01607
4. **A. I. Ahmadov**, M. Demirci, M. F. Mustamin, S. M. Aslanova, and M. Sh. Orujova.
Analytical bound state solutions of the Dirac equation with the Hulthén plus a class of Yukawa potential including a Coulomb-like tensor interaction.
Eur. Phys. J. Plus 136, 208 (2021).
<https://doi.org/10.1140/epjp/s13360-021-01163-y>
5. **A. I. Ahmadov**, S. M. Aslanova, M. Sh. Orujova, S. V. Badalov.
Analytical bound-state solutions of the Klein-Fock-Gordon equation for the sum of Hulthén and Yukawa potential within SUSY quantum mechanics.
Advances in High Energy Phys. Vol. 2021, Article ID 8830063 (2021).
<https://doi.org/10.1155/2021/8830063>
6. **A. I. Ahmadov**, K. H. Abasova, and M. Sh. Orucova. Bound State Solution Schrödinger Equation for Extended Cornell Potential at Finite Temperature
Adv. High Energy Phys. Volume 2021, Article ID 1861946 (2021).
<https://doi.org/10.1155/2021/1861946>
7. **A. I. Ahmadov** et al., Reinterpretation of LHC Results for New Physics: Status and Recommendations after Run 2.
SciPost Physics 9 (2020) 2, 022.
8. **A. I. Ahmadov**, M. Demirci, S. M. Aslanova, M. F. Mustamin.
Arbitrary l-state solutions of the Klein-Gordon equation with the Manning-Rosen plus a Class of Yukawa potentials.
Physics Letters A, 384, 126372 (2020).
9. Sh. M. Nagiyev, **A. I. Ahmadov** and V. A. Tarverdiyeva.
Approximate Solutions to the Klein-Fock-Gordon Equation for the Sum of Coulomb and Ring-Shaped-Like Potentials.
Adv. High Energy Phys. Vol. 2020, Article ID 1356384 (2020).
<https://doi.org/10.1155/2020/1356384>

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10. **A. I. Ahmadov**, C. Aydin, O. Uzun. Inclusive production of charged pion pairs in proton antiproton collisions.
Phys. Rev. C 99, 035204 (2019).
 11. **A. I. Ahmadov**, S. M. Aslanova, M. Sh. Orujova, S.V.Badalov and Shi-Hai Dong. Approximate bound state solutions of the Klein-Gordon equation with the linear combination of Hulthén and Yukawa potentials.
Physics Letters A, Volume 383, 3010 (2019).
 12. Sh. M. Nagiyev, **A. I. Ahmadov**. Exact solution of the relativistic finite difference equation for the Coulomb plus Ring-Shaped potential.
Int. J. Mod. Phys. A34, no.17, 1950089 (2019).
 13. **A. I. Ahmadov**, M. Demirci, S. M. Aslanova. Bound state solution of the Klein – Fock – Gordon equation with the sum of Manning-Rosen potential and Yukawa potential within SUSY QM.
J. Phys. Conf. Ser. 1416, no.1, 012001 (2019).
 14. **A. I. Ahmadov**, C. Aydin and O. Uzun. Bound state solution of the Schrödinger equation at finite temperature.
J. Phys. Conf. Ser. 1194, no.1, 012001 (2019).
 15. Sh. M. Nagiyev and **A. I. Ahmadov**. Time Evolution of quadratic quantum systems: Evolution operators, propagators, and invariants.
Theoretical and Mathematical Physics, 198(3): 392–411 (2019)
 16. M. Abu-Shady, H.M. Mansour, **A.I. Ahmadov**. Dissociation of quarkonium in hot and dense media in an anisotropic plasma in the non-relativistic quark model
Adv. High Energy Phys. 2019, 4785615 (2019).
 17. F. G. Pashaev, **A. I. Ahmadov**, A. G. Gasanov, D. B. Bairamova, S. G. Rahimzade and U. T. Agayeva.
Calculation of spectroscopic parameters of diatomic molecules with an open electron shell.
Russian Physics Journal. Vol. 62. No. 5, 747-755 (2019).
 18. **A. I. Ahmadov**, F. G. Pashaev, D. B. Bairamova, A. G. Gasanov. Calculation of the Energy of the Interelectron Interaction in Molecules in a Basis of Slater Functions.
Russian Physics Journal. Vol. 61. No. 10, 1848 (2019).
 19. Sh. M. Nagiyev, **A. I. Ahmadov**, V. A. Tarverdiyeva, and Sh. A. Amirova.
Regarding Nonstationary Quadratic Quantum Systems.
Russian Physics Journal, Vol. 61, No. 12, 2173 (2019).
 20. F. G. Pashaev, **A. I. Ahmadov**, A. G. Gasanov, D. B. Bairamova, S. Q. Ragimzade and U. T. Agayeva. Calculation of spectroscopic parameters of diatomic molecules with an open electron shell.
Russian Physics Journal, Vol. 62, No. 5, 747 (2019).
 21. M. Demirci and **A. I. Ahmadov**. The inclusive production of charged-kaon pairs in proton-antiproton collisions: The role of higher-twist mechanism
Int. J. Mod. Phys. A33, 1850166 (2018).
 22. Shi-Hai Dong, Ye-Jiao Shi, Guo-Hua Sun, Farida Tahir, **A. I. Ahmadov**, Bing He.
Quantum information measures for infinite spherical well.
Mod. Phys. Lett. A33 no. 16, 1850088 (2018).
 23. **A. I. Ahmadov**, Maria Naeem, M.V.Qocayeva and V.A.Tarverdiyeva.
Analytical Bound State Solutions of the Schrodinger Equation for the Manning - Rosen plus Hulthén potential within SUSY quantum mechanics.
Int. J. Mod. Phys. A33, no.03, 1850021(2018).
 24. **A. I. Ahmadov**, Maria Naeem, M.V.Qocayeva and V.A.Tarverdiyeva.
Analytical Solutions of the Schrödinger Equation for the Manning-Rosen plus Hulthén Potential Within SUSY Quantum Mechanics.
J.Phys.Conf.Ser. 965, no.1, 012001(2018).
 25. **A. I. Ahmadov**, Sh. M. Nagiyev, M. V. Qocayeva, K. Uzun and V. A. Tarverdiyeva.
Bound state solution of the Klein–Fock–Gordon equation with the Hulthén plus a ring-shaped like potential within SUSY quantum mechanics.
Int. J. Mod. Phys. A Vol. 33, 1850203 (2018).
 26. **A. I. Ahmadov**, C. Aydin, O. Uzun.
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27. Abdel Magied Diab, **A. I. Ahmadov**, Abdel Nasser Tawfik and Eiman Abou El Dahab. SU(4) Polyakov linear-sigma model at finite temperature and density.
Published in PoS ICHEP2016 (2016) 634; Arxiv: nucl-th/1611.02693
 28. M. Demirci and **A. I. Ahmadov**. Neutralino pair production via photon-photon collisions at the ILC.
Phys. Rev. D. 94, 075025 (2016).
 29. **A. I. Ahmadov**, C. Aydin, R. Myrzakulov and O. Uzun. Higher-twist mechanism and inclusive gluon production in pion-proton collisions.
J. Phys. Conf. Ser. 670, no.1, 012001 (2016).
 30. **A. I. Ahmadov**, C. Aydin, R. Myrzakulov and O. Uzun. Higher-twist mechanism and inclusive gluon production in pion-proton collisions.
Int. J. Mod. Phys. A30, 1550219 (2015).
 31. M. Demirci and **A. I. Ahmadov**. Search Neutralino Pair Production at CERN LHC.
Phys. Rev. D. 89, 075015 (2014).
 32. **A. I. Ahmadov**, C. Aydin and O. Uzun. Inclusive gluon production in pion - proton collisions and the principle maximum conformality renormalization scale.
Phys. Rev. D. 89, 014018 (2014).
 33. **A. I. Ahmadov**, C. Aydin and O. Uzun. Analytical solutions of the Klein-Fock-Gordon equation with the Manning-Rosen potential plus a Ring-Shaped like potential.
Int. J. Modern. Phys. A29, 1450002 (2014).
 34. **A. I. Ahmadov** and M. Demirci. Single neutralino production at the LHC.
Phys. Rev. D 88, 015017 (2013).
 35. **A. I. Ahmadov**, C. Aydin and O. Uzun. Higher Twist Effects in the Direct Photon Production and the Role of Infrared Renormalons.
Phys. Rev. D 87, 014006 (2013).
 36. **A. I. Ahmadov** and M. Demirci. Electroweak Corrections to the Neutralino Pair Production at CERN LHC.
Int. J. Modern Physics A, Vol. 28, 1350077 (2013).
 37. **A. I. Ahmadov**, C. Aydin and F. Keskin. Pion wave functions from holographic QCD and the role of infrared renormalons in photon-photon collisions.
Phys. Rev. D 85, 034009 (2012).
 38. **A. I. Ahmadov**, C. Aydin and F. Keskin. Pion wave functions from holographic QCD and the role of infrared renormalons in proton-proton collisions.
Annals of Physics 327, 1472 (2012).
 39. **A. I. Ahmadov**, Sh. M. Nagiyev and E. A. Dadashov. Meson production in proton-proton collisions in the naive non-abelianization approximation and the role of infrared renormalons.
Int. J. Mod. Phys. E21, No.2, 1250014 (2012).
 40. **A. I. Ahmadov** and R. M. Burjaliyev. The meson production in proton - proton collisions in next-to-leading order and infrared renormalons.
Int. J. Mod. Phys. E20, No.5, pp. 1243 -1270 (2011).
 41. **A. I. Ahmadov**, Coskun Aydin, E. A. Dadashov and Sh. M. Nagiyev. Single meson production in photon-photon collisions and infrared renormalons.
Phys. Rev. D 81, 054016 (2010).
 42. **A. I. Ahmadov**, Coskun Aydin, Sh. M. Nagiyev, Yilmaz A. Hakan and E. A. Dadashov. Infrared renormalons and single meson production in proton- proton collisions.
Phys. Rev. D80, 016003 (2009).
 43. V. H. Badalov, H. I. Ahmadov, **A. I. Ahmadov**. Analytical solutions of the Schrödinger equation with the Woods-Saxon potential for arbitrary l state.
Int. J. Mod. Phys. E18, No.3, pp.631-641 (2009).
 44. **A. I. Ahmadov**, I. Boztosun, A. Soylu and E. A. Dadashov Higher twist effects in photon-photon collisions.
Int. J. Mod. Phys. E, Vol.17, No.6, pp.1041-1059 (2008).
 45. F. S. Sadykhov, Coskun Aydin and **A. I. Ahmadov**. High twist contributions, quantum
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chromodynamics, and inclusive meson photoproduction at large p_T .

News Baku State University ISSN 1609-0586, №4, pp.181-190 (2007).

46. **A. I. Ahmadov**, I. Boztosun, R. Kh. Muradov, A. Soylu and E. A. Dadashov. Higher twist effects in proton-proton Collisions.
Int. J. Mod. Phys. E 15, No.6, pp.1209-1232 (2006).
 47. **A. I. Ahmadov**, I. Boztosun, R. Kh. Muradov, A. Soylu and E. A.Dadashov. Investigation of the neutralino pair production at LHC.
Int. J. Mod. Phys. E 15, No.6, pp.1183-1208 (2006).
 48. **A. I. Ahmadov**. Radiative production at the lightest neutralino in electron-positron annihilation.
Physics of Atomic Nuclei(Yadernaya Fizika), Vol.69, No.1, pp.51-58, (2006).
 49. R. Kh. Muradov and **A. I. Ahmadov**. Contribution of superstring Z' boson on the polarization effects in proton-proton collisions.
Central Eur. J. Phys., 3(3) , pp.433-455 (2005).
 50. **A. I. Ahmadov** and R. Kh. Muradov. Semi-Inclusive Production of Σ -Hadrons and the Generalized Sullivan Process
Russian Physics Journal, Vol.48, No.7, pp.60-69 (2005).
 51. **A. I. Ahmadov**. Radiative production at the lightest neutralino in electron-positron annihilation.
Russian Physics Journal, Vol.48, No.6, pp. 606-617 (2005).
 52. **A. I. Ahmadov**. Radiative production at the lightest neutralino.
Physics of Particles and Nuclei Letters, Vol.2, No.2, pp.85-91 (2005).
 53. R. Kh. Muradov, **A. I. Ahmadov**, Kh. M. Adilova. Nonperturbative corrections for deep inelastic scattering cross-section ratio $R = \sigma_L / \sigma_T$.
Baku State University News, ISSN 1609-0586, №2, pp.15-24 (2002).
 54. R. Kh. Muradov, **A. I. Akhmedov**, R. M. Burjaliev. Polarization effects in proton-proton collisions.
Physics of Atomic Nuclei, Vol. 65, №7, pp.1352-1358 (2002),
Translated from Yadernaya Fizika, Vol. 65, №7, pp.1385-1391 (2002).
 55. **A. I. Akhmedov**, R. Kh. Muradov. Single-transverse spin asymmetry in direct photon production.
I Eurasia Conference on Nuclear Science and its Application. 23- 27 October 2000, Izmir Turkey, pp.450-451.
 56. R. Kh. Muradov, **A. I. Akhmedov**, R. M. Burjaliev. Polarization effects at the proton-proton collisions.
I Eurasia Conference on Nuclear Science and its Application. 23-27 October 2000, Izmir Turkey, pp.202-203.
 57. R. Kh. Muradov, **A. I. Akhmedov**, R. M. Burjaliev. Spin effects at the proton-proton collisions.
Russian Physics Journal, Vol.43, №8, pp.703-711 (2000).
 58. R. Kh. Muradov, **A. I. Akhmedov**, R. M. Burjaliev. The contribution of the sea quark and gluon in the spin of proton.
Russian Physics Journal, Vol.43, №8, pp.695-702 (2000).
 59. R. Kh. Muradov, **A. I. Akhmedov**, R. M. Burjaliev. The process of inclusive electroproduction pseudoscalar meson on the proton: extracting contribution strange quark in the spin of proton.
Russian Physics Journal, Vol.43, №1, pp.21-25 (2000).
 60. R. Kh. Muradov, **A. I. Ahmadov**, R. M. Burjaliev. Violation of the scaling in the deep inelastic electron-proton scattering.
News of Baku University, №3, pp.75-81 (2000).
 61. F. S. Sadykhov, **A. I. Akhmedov**. Correction for polarization effects in proton- proton scattering in a perturbation quantum-chromodynamics framework.
Russian Physics Journal , Vol.39, №7, pp.690-696 (1996).
 62. F. S. Sadykhov, **A. I. Akhmedov**. QCD investigation of polarization effects in the inclusive photoproduction of SUSY Particls.
Physics of Atomic Nuclei Vol.38, №10, pp.1788-1790 (1995).
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Translated from Yadernaya Fizika, Vol.58, №10, pp.1890-1893 (1995).

63. F. S. Sadykhov, **A. I. Akhmedov**. Production of supersymmetric quarks in photon-gluon collisions.
Russian Physics Journal, Vol.38, №8, pp. 808-810 (1995).
64. F. S. Sadykhov, **A. I. Akhmedov**. Photoformation Supersymmetric particles in deep inelastic scattering of photons by protons.
Russian Physics Journal, Vol. 38, №7, pp.713-716 (1995).
65. F. S. Sadykhov, **A. I. Akhmedov**. Quantum chromodynamic investigation of polarization effects in inclusive photoproduction of supersymmetric particles.
Russian Physics Journal, Vol. 38, №6, pp.646-649 (1995).
66. F. S. Sadykhov, **A. I. Akhmedov**. Contribution of high-order twists to the inclusive photocreation process of mesons with large p_T .
Russian Physics Journal, Vol. 38, №5, pp.513-518 (1995).
67. **A. I. Akhmedov**. Inclusive photoproduction of the large – mesons and p_T contributions high – twist.
**Regional Conference on Mathematics and heoretical Physics.
Tabriz, Iran. 22-25 November 1992.**

INTERNATIONAL AND DOMESTIC GRANTS, PROGRAMS
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1. 30.10.2019-30.11.2019 Visitor CERN, Theoretical Physics Department
2. Science and Education Integration Grant for one year (2018-2019) from Science Development Foundation Under the President of the Republic of Azerbaijan
3. 30.10. 2017- 30.11. 2017, Visitor CERN, Theoretical Physics Department
4. 18-30 July, 2016 **Invited Speaker** 41st Interntional Nathiagali Summer College on Physics and Contemporary Needs, Islamabad, Pakistan
5. 30.09.2015 - 01.11. 2015. Visitor CERN, Theoretical Physics Department
6. 30October2014 -30 January 2015 DAAD Grant, Wuppertal University Germany
7. 24 June - 3July 2014. **Invited Professor** ETTORE MAJORANA FOUNDATION AND CENTRE FOR SCIENTIFIC CULTURE, International School of Subnuclear Physics, ERICE, Italy
8. 2010 September-2024 December. Associate, Theory Division, CERN, Geneva.
9. 2013. September-October, Theory Division, CERN, Geneva, Visitor
10. 2012. July-December, Trabzon, Turkey, TUBITAK Grant-2221, Karadeniz Technical University
11. 2011. July-October, Trabzon, Turkey, TUBITAK Grant-2221, Karadeniz Technical University
12. 2010, September-October, Theory Division, CERN, Geneva, Visitor
13. 2010, 05July-05 September, ICTP, Trieste, Italy, Visitor
14. 2009, July-August, Theory Division, CERN, Geneva, Visitor
15. 2009, September- December, Aachen, Germany; Aachen University, DAAD Grant
16. 2008, Government Grant of Pakistan
17. 2006, January –July, Kayseri, Turkey; TUBITAK Grant-2221, Erciyes University
18. 2006, October-December, Bonn, Germany; Bonn University, DAAD Grant

19.2004, January-2007 December; NATO Reintegration Grant-980779

20. 2002, September- December, Wuppertal University Wuppertal, Germany; DAAD Grant

MEMBER OF THE EDITORIAL BOARD

A. I. Ahmadov is a member of the editorial board in

Journal of Physics and Advanced Applications

(https://journalofphysics.net/journal/editorial_board/).

Journal of Baku Engineering University, P H Y S I C S

<http://journal.beu.edu.az/>

Also Reviewer for various peer-reviewed journals: these include in the journal

“Mathematical Reviews, (American Mathematical Society)”,

International Journal of Modern Physics A,

International Journal of Modern Physics E,

Advances in High Energy Physics,

Chinese Journal of Physics,

Journal Physica Scripta,

Indian Journal of Physics,

Physics Letters A,

Eur. Phys. J. Plus

Ukrainian Journal of Physics

Few-Body Systems

Mathematics and Computational Sciences

Chemical Physics Letters

Journal of Computational and Applied Mathematics

Letters in Mathematical Physics

Journal of Baku Engineering University, P H Y S I C S