Armenuhi Gevorg Ghazaryan

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Ուժեղ դաշտերի ֆիզիկայի կենտրոն
Leading Researcher

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Education

Institution	Yerevan State University
Faculty	Department of physics/ theoretical physics
Date	1992 - 1997
Degree name	PhD student

Institution	Yerevan State University
Faculty	Department of physics/ theoretical physics
Date	1987 - 1992
Degree name	Qualified specialist

Scientific Rank/degree

Institution	Yerevan State University
Date	2015
Degree name	Doctor
Research Topic	Research of some atomic and plasma phenomena in strong laser fields

Language skills

English Русский Հայերեն

Work experience

Institution	Yerevan State University, Institute of Physics, Centre of Strong Fields Physics
Period of time	1992 till now
Rank/degree	Leading Research Associate

Participation in international conferences and seminars

07/09/2025 - 12/09/2025	2025 IEEE 15th on “Nanomaterials: Applications & Properties” Institute of Electrical Engineering at the Slovak Academy of Sciences Slovakia
01/09/2025 - 05/09/2025	Flatlands Beyond Graphene 2025 Politecnico di Milano Italy
25/06/2025 - 28/06/2025	The International 15th edition of Graphene Conference series (Graphene2025) San Sebastian University Spain
30/10/2023 - 31/10/2023	International Conference on Nanotechnology, Optoelectronics and Photonics World Academy of Science, Engineering and Technology United States of America (the)
25/07/2022 - 27/07/2022	MNs-22 —2nd International Conference Materials and Nanomaterials Rome University Italy
04/10/2021 - 07/10/2021	6th International Conference “Nanotechnology” dedicated to the memory of Prof. Alex Gerasimov, Nano21 Georgian Technical University, Tbilisi Georgia
30/10/2023 - 08/11/2023	Collaboration in frames of the project Max Planck Institute for Nuclear Physics, Heidelberg Germany
25/09/2023 - 29/09/2023	Flatlands beyond graphene 2023 University of Chemistry and Technology, Prague Czech Republic (the)

Publications

Article

High harmonic generation and wave mixing in graphene quantum dots by bichromatic laser fields of circular polarization

H. K. Avetissian, A. G. Ghazaryan, G. F. Mkrtchian, Kh. V. Sedrakian

Results in Physics 2026 108579

https://www.sciencedirect.com/science/article/pii/S2211379726000057

Article

High harmonic generation in rhombus graphene quantum dots with elliptically polarized strong laser pulses

A G Ghazaryan, Kh V Sedrakian

Journal of Physics B Atomic Molecular and Optical Physics 2026 015402

https://iopscience.iop.org/article/10.1088/1361-6455/ae340d

Article

Elliptically Polarized High Laser Harmonics in the Hexagonal Graphene Quantum Dot [Эллиптически поляризованные высокие лазерные гармоники в гексагональной графеновой квантовой точке]

A. G. Ghazaryan, N. O. Arustamyan, G. H. Chopuryan, Kh. V. Sedrakyan

Proceedings of NAS RA Physics 2025 160-165

Conference

Elliptically Polarized High-order Laser Harmonics in Hexagonal Graphene Quantum Dots

A. G. Ghazaryan, N. O. Arustamyan, G. H. Chopuryan, Kh. V. Sedrakian

2025 363 - 363

https://www.grapheneconf.com/2025/index.php

Conference

High-Order Harmonics Generation in Graphene Quantum Dots by Bichromatic Laser Fields of Circular Polarization

Kh. V. Sedrakian, H. K. Avetissian, A. G. Ghazaryan, G. F. Mkrtchian

2025 364-364

https://www.grapheneconf.com/2025/posters.php

Conference

High Harmonic Generation in Graphene Quantum Dots with Laser Fields of Elliptic Polarization

A G. Ghazaryan, H. H. Matevosyan, N. O. Arustamyan, T. M. Markosyan, Kh. V. Sedrakian

2025 17-17

https://flatlands2025.org/

Conference

High Harmonic Generation and Wave Mixing in Graphene Quantum Dots by Bichromatic Laser Fields of Circular Polarization

H. K. Avetissian, A. G. Ghazaryan, G. F. Mkrtchian, Kh. V. Sedrakian

2025 16 - 16

https://flatlands2025.org/

Conference

Symmetrically driven enhancement of high harmonic generation in graphene quantum dots

Armenuhi Gevorg Ghazaryan, Hamlet Karo Avetissian, Garnik Felix Mkrtchian, Khachik Vazgen Sedrakian

2025 ID#: 1486

https://ieeenap.org/scientific-program/

Article

Интенсивная генерация высших гармоник в молекуле фуллерена C180 (INTENSE HIGH HARMONIC GENERATION IN FULLERENE MOLECULE C180)

Аветисян Г.К., Казарян А.Г., Матевосян Г.Г., Мкртчян Г.Ф.

Журнал Экспериментальной и Теоретической Физики 2024 25-31

Article

Optical anisotropy of high-order harmonic generation by strong laser radiation in rectangular

graphene quantum dot
Armenuhi G. Ghazaryan, Suren V. Sukiasyan, Khachik V. Sedrakian

Journal of Nanophotonics 2024 046002

Conference

High-order Harmonic Generation in the Giant Fullerene Molecules
H. K. Avetissian, A. G. Ghazaryan, H. H. Matevosyan, G. F. Mkrtchian

2024 E-FMN-1

https://nanomatsci-com-dot-radiant-century-424110-p9.uc.r.appspot.com/?c=1AZVXZ...

Conference

HIGH HARMONIC GENERATION BY STRONG LASER RADIATION IN FULLERENE MOLECULE C180
H. K. Avetissian, A. G. Ghazaryan, H. H. Matevosyan, G. F. Mkrtchian

2024 25-25

https://nano2024.gtu.ge/

Article

Multiphoton excitation and high harmonic generation in rectangular graphene quantum dot
A. G. Ghazaryan, Kh. V. Sedrakian, G. A. Musayelyan, T. M. Markosyan

Physica Scripta 2023 055921/13

Article

ГЕНЕРАЦИЯ ВЫСШИХ ГАРМОНИК С УЧЕТОМ МНОГОЧАСТИЧНОГО КУЛОНОВСКОГО ВЗАИМОДЕЙСТВИЯ В ГРАФЕНОВОЙ КВАНТОВОЙ ТОЧКЕ
Х. В. Седракян, А. Г. Казарян, Б. Р. Авчян, Г. А. Мусаелян, Т. М. Маркосян

Журнал Экспериментальной и Теоретической Физики 2023 56–65

Article

High Harmonic Generation with Many-Particle Coulomb Interaction in Graphene Quantum Dot
Kh. V. Sedrakian, A. G. Ghazaryan, B. R. Avchyan, G. A. Musayelyan, T. M. Markosyan

Журнал Экспериментальной и Теоретической Физики 2023 47–54

Article

ГАРМОНИКИ ВЫСШЕГО ПОРЯДКА В ГЕКСАГОНАЛЬНЫХ ГРАФЕНОВЫХ КВАНТОВЫХ ТОЧКАХ
Х.В. Седракян, А. Г. Казарян, Б. Р. Авчян, К.С. Погосян, Т.М. Маркосян

Журнал Экспериментальной и Теоретической Физики 2023 457–466

Article

Higher-Order Harmonics in Hexagonal Graphene Quantum Dots
Kh. V. Sedrakian, A. G. Ghazaryan, B. R. Avchyan, Q. S. Poghosyan, T. M. Markosyan

Journal of Experimental and Theoretical Physics 2023 395–403

Article

Long-range correlation-induced effects at high-order harmonic generation on graphene quantum dots
H. K. Avetissian, A. G. Ghazaryan, Kh. V. Sedrakian, G. F. Mkrtchian

Physical review. B./Physical review. B 2023 165410

Conference

Optical anisotropy of high-order harmonic generation in rectangular graphene quantum dots

B. R. Avchyan, A. G. Ghazaryan, Q. S. Poghosyan, Kh. V. Sedrakian

2023 138 - 138

https://flatlands2023.com/

Article

Генерация высоких гармоник в треугольных квантовых графеновых точках
Б. Р. Авчян, А. Г. Казарян, К. А. Саргсян, Х. В. Седракян

Журнал Экспериментальной и Теоретической Физики 2022 155–165

Article

High Harmonic Generation in Triangular Graphene Quantum Dots
B. R. Avchyan, A. G. Ghazaryan, K. A. Sargsyan, Kh. V. Sedrakyan

Journal of Experimental and Theoretical Physics 2022 125–134

Article

High harmonic generation with many-body Coulomb interaction in rectangular graphene quantum dots of armchair edge
Babken R. Avchyan, Armenuhi G. Ghazaryan, Samvel S. Israelyan, Khachik V. Sedrakian

Journal of Nanophotonics 2022 036001: 1-12

Article

On Laser-Induced High-Order Wave Mixing and Harmonic Generation in a Graphene Quantum Dot
B. R. Avchyan, A. G. Ghazaryan, K. A. Sargsyan, Kh. V. Sedrakian

JETP Letters 2022 428-435

Article

О лазерно-индуцированной генерации высших гармоник и смешении волн высокого порядка в графеновой квантовой точке
Авчян Б. Р., Казарян А. Г., Саргсян К.А., Седракян Х. В.

Письма в Журнал экспериментальной и теоретической физики (Journal of Experimental and Theoretical Physics Letters)
2022 426-433

Conference

High harmonic generation on graphene quantum dots with collective scattering of electrons
B. Avchyan, A. Ghazaryan, S. Israelyan, Kh. Sedrakian

2022 028

https://scik.eu/Rome2022/MNSAbBo.php

Conference

Laser induced high-order wave mixing and multiparticle interaction in graphene quantum dots
A.G. Ghazaryan, H.H. Matevosyan, Kh.V. Sedrakian

2022 039

https://scik.eu/Rome2022/MNSAbBo.php

Article

Higher harmonic generation of coherent sub-THz radiation at Lifshitz transition in gapped bilayer graphene

Ghazaryan A. G.

Журнал Экспериментальной и Теоретической Физики 2021 843–851

Article

ГЕНЕРАЦИЯ ВЫСШИХ ГАРМОНИК КОГЕРЕНТНОГО СУБТЕРАГЕРЦЕВОГО ИЗЛУЧЕНИЯ ПРИ ПЕРЕХОДЕ ЛИФШИЦА В ДВУХСЛОЙНОМ ГРАФЕНЕ СО ЩЕЛЬЮ

А. Г. Казарян

Журнал Экспериментальной и Теоретической Физики 2021 952–962

Article

High harmonic generation in fullerene molecules

H. K. Avetissian, A. G. Ghazaryan, G. F. Mkrtchian

Physical review. B./Physical review. B 2021 125436

Article

ОТКЛИК ВЫСШИХ ГАРМОНИК ИНТЕНСИВНОГО КОГЕРЕНТНОГО ЭЛЕКТРОМАГНИТНОГО ПОЛЯ НА ИЗМЕНЕНИЕ ТОПОЛОГИИ ПОВЕРХНОСТИ ФЕРМИ В ГРАФЕНОПОДОБНЫХ НАНОСИСТЕМАХ

Авчян Б. Р., Казарян А. Г., Саргсян К. А., Седракян Х. В.

Журнал Экспериментальной и Теоретической Физики 2021 1003–1012

Article

Fermi Surface Topology Signature on the High Harmonics Generation in Graphene-Like Nanostructure

B. R. Avchyan, A. G. Ghazaryan, K. A. Sargsyan, Kh. V. Sedrakian

Журнал Экспериментальной и Теоретической Физики 2021 883–891

Conference

High harmonic generation in plane graphene quantum dots with different shapes and edges

B. R. Avchyan, K. A. Sargsyan, A. G. Ghazaryan, Kh. V. Sedrakian

2021 9

http://www.nano2020.gtu.ge/

Conference

High harmonic generation at particle-hole multiphoton excitation in gapped bilayer graphene

H. Avetissian, A. Avetissian, A. Ghazaryan, G. Mkrtchian, Kh. Sedrakian

2021 10

http://www.nano2020.gtu.ge/

Conference

Harmonic generation at low-energy particle-hole excitation in bilayer graphene

Armenuhi Ghazaryan, Hrant Matevosyan, Khachik Sedrakian

2021 35

http://www.nano2020.gtu.ge/

Article

High-harmonic generation at particle–hole multiphoton excitation in gapped bilayer graphene

Hamlet K. Avetissian, Ara K. Avetissian, Armenuhi G. Ghazaryan, Garnik F. Mkrtchian,

Khachik V. Sedrakian

Journal of Nanophotonics 2020 026004(1-15)

Article

High harmonics generation in bilayer graphene at high Fermi energies induced by coherent THz-radiation

Armenuhi G. Ghazaryan, Hrant H. Matevosyan, Khachik V. Sedrakian

Journal of Nanophotonics 2020 046009(1-15)

Article

X-ray absorption via electron–ion bremsstrahlung in Maxwellian plasma at the exact consideration of Coulomb potential

A G Ghazaryan

Laser Physics Letters 2019 066002(1-5)

Article

К ВКЛАДУ ДАЛЬНОДЕЙСТВУЮЩЕГО РАССЕИВАЮЩЕГО ПОТЕНЦИАЛА В ПРОЦЕССЕ МНОГОФОТОННОЙ НАДПОРОГОВОЙ ИОНИЗАЦИИ АТОМОВ В ЛАЗЕРНОМ ПОЛЕ

А. Г. Казарян

Журнал Экспериментальной и Теоретической Физики 2019 602–611

Article

On the Contribution of the Long-Range Scattering Potential in the Process of Multiphoton Above-Threshold Ionization of Atoms in the Laser Field

A. G. Ghazaryan

Journal of Experimental and Theoretical Physics 2019 514 - 522

Article

Third harmonic generation in gapped bilayer graphene

Ara Karapet Avetissian, Armenuhi Gevorg Ghazaryan, Khachik Vazgen Sedrakian

Journal of Nanophotonics 2019 036010(1-13)

Article

Microscopic nonlinear quantum theory of absorption of coherent electromagnetic radiation in doped bilayer graphene

Armenuhi G. Ghazaryan, Khachik V. Sedrakian

Journal of Nanophotonics 2019 046008(1-14)

Article

Multiphoton cross sections of conductive electrons stimulated bremsstrahlung in doped bilayer graphene

Armenuhi G. Ghazaryan, Khachik V. Sedrakian

Journal of Nanophotonics 2019 046004(1-14)

Conference

X-ray Absorption in Plasma by One-photon Stimulated Bremsstrahlung with the Exact Consideration of Coulomb potential

A.K. Avetissian, A.G. Ghazaryan, Kh.V. Sedrakyan

2019 P1.2021

https://www.epsplasma2019.eu/

Conference

Third Order Harmonic Generation in Gapped Bilayer Graphene

A. K. Avetissian, A. G. Ghazaryan, Kh.V. Sedrakyan

2019 GNN1057

http://www.gnnconf.org

Conference

High-Harmonic Generation in Bilayer Graphene with an Electric Field Induced Band Gap
A. K. Avetissian, B. R. Avchyan, A. G. Ghazaryan, Kh. V. Sedrakyan

2019 ICANM_125

http://icanm2019.iaemm.com/

Conference

Microscopic nonlinear quantum theory of strong electromagnetic radiation absorption in doped bilayer graphene
A. G. Ghazaryan, Kh. V. Sedrakian

2019 ID-385

http://www.interphotonics.org/

Conference

Higher Harmonic Generation in AB Stacked Bilayer Graphene
A. G. Ghazaryan, Kh. V. Sedrakian

2019 P1-25

http://www.camnp2019.com/

Article

Microscopic nonlinear quantum theory of absorption of strong electromagnetic radiation in doped graphene
Ara Karapet Avetissian, Armenuhi Gevorg Ghazaryan, Khachik Vazgen Sedrakian,

Babken Ruben Avchyan

Journal of Nanophotonics 2018 016006/12

https://spie.org/publications/journals/journal-of-nanophotonics

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Conference

Impact of Electron-ion Coulomb Interaction in Above Threshold Ionization of Atom in Strong Medium Infrared Laser Field
Avetissian A.K., Ghazaryan A.G., Sedrakian Kh.V., Avchyan B.R.

2018 P2A1346-5

https://eventmobi.com/icops2018/speakers/281419/6893394

Conference

Nonlinear Absorption Coefficient of Doped Graphene by Conductive Electrons Scattering on Charged Impurities
A.K. Avetissian, A.G. Ghazaryan, Kh.V. Sedrakian

2018 ICANM_T_134

http://ICANM2018.iaemm.com

Conference

Radiation induced nonlinear cross sections of conductive electrons scattering on charged impurities in bilayer graphene
A. K. Avetissian, B. R. Avchyan, A. G. Ghazaryan, Kh. V. Sedrakian

2018 16

http://gtu.ge/Eng/Conference/10986/

Article

High harmonic generation in Landau-quantized graphene subjected to a strong electromagnetic radiation

Hamlet K. Avetissian, Armenuhi G. Ghazaryan, Garnik F. Mkrtchian, Khachik V. Sedrakian

Journal of Nanophotonics 2017 016004: 1- 9

https://spie.org/publications/journals/journal-of-nanophotonics

Article

Induced nonlinear cross sections of conductive electrons scattering on the charged impurities in doped graphene

Avetissian Ara K., Ghazaryan Armenuhi G., Sedrakian Khachik V., Avchyan Babken R.

Journal of Nanophotonics 2017 036004: 1-12

https://spie.org/publications/journals/journal-of-nanophotonics

Conference

Nonlinear Absorption Coefficient of Doped Graphene at Conductive Electrons Scattering on Charged Impurities

A.G. Ghazaryan, B.R. Avchyan, H.H. Matevosyan, Kh.V. Sedrakian

2017 P4-036

Conference

Impact of Coulomb collisions on laser-plasma interaction processes at high densities and relativistic intensities

Ghazaryan A.G., Israelyan S.S., Matevosyan H.H., Sedrakian Kh.V.

2017 782

http://icpeac30.edu.au/

Article

Nonlinear absorption of high-intensity x-ray radiation in ultradense plasma

H.K. Avetissian, A.K. Avetissian, A.G. Ghazaryan, H.H. Matevosyan, G.F. Mkrtchian

News and Reports from High Energy Density generated by Heavy Ion and Laser Beams 2015 2016 Ł -78

https://repository.gsi.de/record/194814/files/HEDP_report__2k15_web-version.pdf

Conference

X-ray Absorption via Electron-ion SB in Maxwellian Plasma at the Exact Consideration of Coulomb Potential

H.K. Avetissian, A.K. Avetissian, A.G. Ghazaryan, G.F. Mkrtchian

2016 1P- 1

http://icops2016.ece.ualberta.ca/

Conference

Landau-quantized graphene in strong radiation field and high harmonic generation

H.K. Avetissian, A.G. Ghazaryan, G.F. Mkrtchian, Kh.V. Sedrakian

2016 78

http://www.nano2016.gtu.ge/

Conference

Radiation Induced Nonlinear Cross Sections of Conductive Electrons Scattering on Charged

Impurities in Doped Graphene
A.K. Avetissian, B.R.Avchyan, A.G. Ghazaryan, Kh.V. Sedrakian

2016 8

Article

Microscopic nonlinear relativistic quantum theory of absorption of powerful x-ray radiation in plasma
H. K. Avetissian, A. G. Ghazaryan, H. H. Matevosyan, G. F. Mkrtchian

Physical review. E 2015 043103/8

https://journals.aps.org/pre/

Article

TREATMENT OF THE PLASMA NONLINEAR ABSORPTION LAW AT LINEARLY POLARIZED LASER RADIATION OF RELATIVISTIC INTENSITIES
A. G. Ghazaryan

Armenian Journal of Physics 2015 64-72

http://ajp.asj-oa.am/

Conference

Nonlinear Absorption of Superintense Linearly Polarized Laser Radiation in Relativistic Plasma via Bremsstrahlung
A. K. Avetissian, A. G. Ghazaryan, S. S. Israelyan, Kh. V. Sedrakian

2015 1P-11

Conference

Nonlinear Absorption of Superstrong Linearly Polarized Laser Radiation in Plasma owing to Inverse Bremsstrahlung on Coulomb Centers
A.G. Ghazaryan

2015 CDAMOP20

http://www.cdamop.com/
