

Armenuhi Gevorg Ghazaryan

Research Institute of Physics

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
Specialty	Physico-mathematical sciences
Research Topic	Research of some atomic and plasma phenomena in strong laser fields

Language skills

English Русский Հայերեն

Work experience

Institution	Yerevan State University
Period of time	1992 till now
Rank/degree	Leading Research Associate

Scientific interests

- plasma physics with relativistic classical and quantum theories of multiphoton processes, theoretical aspects of above-threshold ionization of atoms, and high harmonic generation in atomic systems, and graphene physics

Participation in international conferences and seminars

-
- 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

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

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. Седрабян, А. Г. Казарян, Б. Р. Авчян, Г. А. Мусаелян, Т. М. Маркосян

Журнал экспериментальной и теоретической физики (Journal of Experimental and Theoretical Physics)
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 (Journal of Experimental and Theoretical Physics)
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 (Journal of Experimental and Theoretical Physics)
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 2023 165410

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 (Journal of Experimental and Theoretical Physics)
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

Article

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

Ghazaryan A. G.

Журнал экспериментальной и теоретической физики (Journal of Experimental and Theoretical Physics)
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 (Journal of Experimental and Theoretical Physics)
2021 952-962

Article

High harmonic generation in fullerene molecules

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

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., Седракийн Х. В.

Журнал экспериментальной и теоретической физики (Journal of Experimental and Theoretical Physics)
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 (Journal of Experimental and Theoretical Physics)
2021 883-891

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 (Journal of Experimental and Theoretical Physics)
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)

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>

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>

*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 t₂ -78

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

*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

*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

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

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

*Conference***Nonlinear Absorption of Superstrong Linearly Polarized Laser Radiation in Plasma owing to Inverse Bremsstrahlung on Coulomb Centers**

A.G. Ghazaryan

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

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

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.

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.

Conference

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

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

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

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

Conference

Third Order Harmonic Generation in Gapped Bilayer Graphene

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

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

Conference

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

A. G. Ghazaryan, Kh. V. Sedrakian

Conference

Higher Harmonic Generation in AB Stacked Bilayer Graphene

A. G. Ghazaryan, Kh. V. Sedrakian

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

Conference

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

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

Conference

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

Armenuhi Ghazaryan, Hrant Matevosyan, Khachik Sedrakian

Conference

High harmonic generation on graphene quantum dots with collective scattering of electrons

B. Avchyan, A. Ghazaryan, S. Israelyan, Kh. Sedrakian

Conference

Laser induced high-order wave mixing and multiparticle interaction in graphene quantum dots

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

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

Conference

HIGH HARMONIC GENERATION BY STRONG LASER RADIATION IN FULLERENE MOLECULE C180

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

Conference

High-order Harmonic Generation in the Giant Fullerene Molecules

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