

# Arus Slavik Harutyunyan

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## Research Institute of Physics

Laboratory for Research and Modeling of Quantum Phenomena  
Researcher

## Education

Institution	Yerevan State University
Faculty	Faculty of physics
Date	2008 - 2014
Degree name	Masters

## Scientific Rank/degree

Institution	Goethe University, Institute for Theoretical Physics
Date	2018
Degree name	Postgraduate
Scientific Supervisor	Armen Sedrakian
Research Topic	Relativistic hydrodynamics and transport in strongly correlated systems

## Work experience

Institution	Byurakan Astrophysical Observatory
Period of time	2018 till now
Rank/degree	Senior researcher

## Scientific interests

- Compact stars, transport phenomena, relativistic hydrodynamics

## Publications

Article  
**Generalized relativistic second-order dissipative hydrodynamics: coupling different rank tensors**  
Arus Harutyunyan, Armen Sedrakian  
Annals of Physics 2025 170159

Article  
**Bulk Viscosity of Two-Flavor Color Superconducting Quark Matter in Neutron Star Mergers**

*Article*

**Electrical conductivity of a warm neutron star crust in magnetic fields: Neutron-drip regime**

Arus Harutyunyan, Armen Sedrakian, Narine T. Gevorgyan, Mekhak V. Hayrapetyan

Physical Review C 2024 055804

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*Article*

**Bulk viscosity of two-color superconducting quark matter in neutron star mergers**

Mark Alford, Arus Harutyunyan, Armen Sedrakian, Stefanos Tsiopelas

Physical Review D 2024 L061303

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*Article*

**Thermal Conductivity and Thermal Hall Effect in Dense Electron-Ion Plasma**

Arus Harutyunyan, Armen Sedrakian

Particles 2024 967-983

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*Article*

**Phenomenological Relativistic Second-Order Hydrodynamics for Multiflavor Fluids**

Arus Harutyunyan, Armen Sedrakian

Symmetry 2023 494

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*Article*

**Bulk viscosity from Urca processes:  $npe\mu$  matter in the neutrino-transparent regime**

Mark Alford, Arus Harutyunyan, Armen Sedrakian

Physical Review D 2023 083019

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*Article*

**Relativistic second-order dissipative hydrodynamics from Zubarev's non-equilibrium statistical operator**

Arus Harutyunyan a, Armen Sedrakian, Dirk H. Rischke

Annals of Physics 2022 168755

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*Article*

**Delta-resonances and hyperons in proto-neutron stars and merger remnants**

Armen Sedrakian, Arus Harutyunyan

European Physical Journal A 2022 137

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*Article*

**Bulk Viscosity of Relativistic  $npe\mu$  Matter in Neutron-Star Mergers**

Mark Alford, Arus Harutyunyan, Armen Sedrakian

Particles 2022 361-376

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*Article*

**Bulk viscosity from Urca processes:  $npe\mu$  matter in the neutrino-trapped regime**

Mark Alford, Arus Harutyunyan, Armen Sedrakian

Physical Review D 2021 103027

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*Article*

## **Equation of State and Composition of Proto-Neutron Stars and Merger Remnants with Hyperons**

Armen Sedrakian, Arus Harutyunyan

UNIVERSE 2021 382

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### *Article*

#### **Bulk Viscous Damping of Density Oscillations in Neutron Star Mergers**

Mark Alford, Arus Harutyunyan, Armen Sedrakian

Particles 2020 500-517

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### *Article*

#### **Bulk viscosity of baryonic matter with trapped neutrinos**

Mark Alford, Arus Harutyunyan, Armen Sedrakian

Physical Review D 2019 103021

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### *Article*

#### **Bulk Viscosity of Hot Quark Plasma from Non-Equilibrium Statistical Operator**

Arus Harutyunyan, Armen Sedrakian

Particles 2018 212-229

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### *Article*

#### **Relativistic Dissipative Fluid Dynamics from Non-Equilibrium Statistical Operator**

Arus Harutyunyan, Armen Sedrakian, Dirk H. Rischke

Particles 2018 155-165

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### *Article*

#### **Electrical resistivity and Hall effect in binary neutron star mergers**

Arus Harutyunyan, Antonios Nathanail, Luciano Rezzolla, Armen Sedrakian

European Physical Journal A 2018 191

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### *Article*

#### **On the importance of resistivity and Hall effect in MHD simulations of binary neutron star mergers**

A. S. Harutyunyan

Communications of the Byurakan Astrophysical Observatory 2018 338-345

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### *Article*

#### **Transport coefficients of two-flavor quark matter from the Kubo formalism**

Arus Harutyunyan, Dirk H. Rischke, Armen Sedrakian

Physical Review D 2017 114021

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### *Article*

#### **Bulk viscosity of two-flavor quark matter from the Kubo formalism**

Arus Harutyunyan, Armen Sedrakian

Physical Review D 2017 034006

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### *Article*

#### **Electrical conductivity of a warm neutron star crust in magnetic fields**

Arus Harutyunyan, Armen Sedrakian

Physical Review C 2016 025805-1-18

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*Article*

**ABSORPTION OF MAGNETOSONIC WAVES IN THE CRUST OF NEUTRON STARS. RADIO EMISSION FROM PULSARS**

D. M. Sedrakian, A. S. Harutyunyan, M. V. Hayrapetyan

Астрофизика (Astrophysics) 2014 530-549

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*Article*

**MAGNETOHYDRODYNAMIC EQUATIONS FOR THE CRUST OF NEUTRON STARS**

D. M. Sedrakian, A. S. Harutyunyan, M. V. Hayrapetyan

Астрофизика (Astrophysics) 2013 76-87

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*Article*

**Magnetosonic waves in the crust of a neutron star**

D. M. Sedrakian, A. S. Harutyunyan, M. V. Hayrapetyan

Астрофизика (Astrophysics) 2013 229-245

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*Conference*

**Magnetosonic waves in the crust of a neutron star**

D. M. Sedrakian, A. S. Harutyunyan, M. V. Hayrapetyan

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*Conference*

**Electrical conductivity tensor of dense plasma in magnetic fields**

Arus Harutyunyan, Armen Sedrakian

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