

Center for Mathematical and Applied Research

Cosmology Laboratory

Head of laboratory

Publications

Article

Cosmic voids and the kinetic analysis V. Hubble tension, the cosmological constant, and aperiodic filaments

V.G.Gurzadyan, V.M.Chechetkin, N.N.Fimin

Astronomy and Astrophysics 2026 A70

Article

Cosmic voids and the kinetic analysis: IV. Hubble tension and the cosmological constant

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Astronomy and Astrophysics 2025 A252

Article

Messier 90 galactic halo rotation in the microwaves

V.G.Gurzadyan, De Paolis F., G.Yegoryan, A.Kashin, Qadir A., Tahir N., Jetzer Ph.

Astronomy and Astrophysics 2025 L2

Article

Kolmogorov analysis of JWST deep survey galaxies

V.G.Gurzadyan, A.A.Kocharyan, N.Galikyan

Astronomy and Astrophysics 2025 L21

Article

On the Earth's tidal perturbations.II. LARES 2 satellite

V.G.Gurzadyan, H.G.Khachatryan, S.Mirzoyan, A.Paolozzi, I. Ciufolini

European Physical Journal Plus 2025 512

Article

Vishap stelae as cult dedicated prehistoric monuments of Armenian Highlands: data analysis and interpretation

Vahe Gurzadyan, Arsen Bobokhyan

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Article

Probing lambda-gravity with Bose-Einstein condensates

V. Gurzadyan, I. Fuentes, A. Belyaev, H. A. Fernandez-Melendez

Physical Review Research 2025 L042051

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Focus point on tensions in cosmology from early to late universe: part II: new directions in the light of observations from the most modern astronomical facilities

V.G.Gurzadyan, E. Di Valentino, S.Capozziello

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Neural network analysis of S2-star dynamics: extended mass

V.G.Gurzadyan, N. Galikyan, Sh. Khlghatyan, A. A. Kocharyan

European Physical Journal Plus 2024 246

Article

S2-star dynamics probing the galaxy core cluster

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Smearing of primordial gravitational waves

V.G.Gurzadyan, A.A.Kocharyan, M.Samsonyan

European Physical Journal Plus 2024 317

Article

On the high accuracy to test dragging of inertial frames with the LARES 2 space experiment

Vahe Gurzadyan, Ciufolini Ignazio, Paris Claudio, Pavlis Erricos C., Ries John C., Matzner Richard,

Deka Darpanjeet, Ortore Emiliano, Kuzmicz-Cieslak Magdalena, Penrose Roger, Paolozzi Antonio,

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European Physical Journal C 2024 998

Article

The LARES 2 satellite, general relativity and fundamental physics

Vahe Gurzadyan, Ignazio Ciufolini, Antonio Paolozzi, Erricos C. Pavlis, John C. Ries, Richard Matzner,

Claudio Paris, Emiliano Ortore, Roger Penrose

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Focus point on tensions in cosmology from early to late universe: the value of the Hubble constant and the question of dark energy

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European Physical Journal Plus 2023 184

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Cosmic voids and the kinetic analysis. II. Link to Hubble tension

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Cosmic voids and the kinetic analysis III. Hubble tension and structure formation in the late Universe

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Neural network analysis of S-star dynamics: implications for modified gravity

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*Article***First results of the LARES 2 space experiment to test the general theory of relativity**

Vahe Gurzadyan, Ignazio Ciufolini, Claudio Paris, Erricos C. Pavlis, John Ries, Richard Matzner, Antonio Paolozzi, Emiliano Ortore, Giuseppe Bianco, Magdalena Kuzmicz-Cieslak, Roger Penrose

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*Article***On the origin of cosmic web**

Gurzadyan V.G., Chechetkin, Fimin

European Physical Journal Plus 2022 132

*Article***The cosmological constant vs adiabatic invariance**

V. G. Gurzadyan, A. A. Kocharyan, A. Stepanian, Sh. Khlghatyan

European Physical Journal Plus 2022 458

*Article***Tidal disruption effects near black holes and Lambda-gravity**

A.Stepanian, V.Gurzadyan, Sh.Khlghatyan

European Physical Journal Plus 2022 965

*Article***Gravitational waves as waveguides**

V. G. Gurzadyan, M. Samsonyan, A. A. Kocharyan

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*Article***Cosmic voids and the kinetic analysis**

V.G.Gurzadyan, V.M.Chechetkin, N.Fimin

Astronomy and Astrophysics 2022 A149

*Article***Hubble tension and absolute constraints on the local Hubble parameter**

V.G.Gurzadyan, A.Stepanian

Astronomy and Astrophysics 2021 A145

*Article***Cosmic voids and induced hyperbolicity. III. Tracing redshift dependence**

V.G.Gurzadyan, A.Kocharyan, M.Samsonyan, A.Stepanian

European Physical Journal Plus 2021 821

*Article***Cosmological constant, information and gedanken experiments with black hole horizons**

V.G.Gurzadyan, A.Stepanian

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Cosmic voids and induced hyperbolicity. II. Sensitivity to void/wall scales

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Focus point on modified gravity theories and cosmology

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Ultrahigh accuracy time synchronization technique operation on the Moon

V.G.Gurzadyan, A.Margarian

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Black hole shadow to probe modified gravity

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Cosmic voids and induced hyperbolicity

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Lense-Thirring precession and gravito-gyromagnetic ratio

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Article

On the Lambda-evolution of galaxy clusters

V.G.Gurzadyan, A. A. Kocharyan, A. Stepanian

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Focus Point on Tests of General Relativity and Alternative Gravity Theories

V. Gurzadyan, I. Ciufolini, S. Capozziello

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Article

Cosmological constant as a fundamental constant

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Rotating baryonic dark halos

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Messier 81's Planck view versus its halo mapping

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