



# George Alestas

Physicist - PhD Candidate 

## Affiliation

University of Ioannina

## Website

[georgealestas.github.io](https://github.com/georgealestas)

## Tel & Skype

(+30) 6989964269  
alestasg

## Mail

[g.alestas@uoi.gr](mailto:g.alestas@uoi.gr)  
[alestasg@gmail.com](mailto:alestasg@gmail.com)

## Languages

Greek → Native  
English → Fluent

## Professional Summary

A highly motivated researcher specializing in Cosmology and Astrophysics. I am proficient in the theoretical and numerical exploration of cosmological models, including cosmological parameter inference using various well-known MCMC software. I have worked on several aspects of the Hubble and  $S_8$  tensions. Part of the Snowmass - Cosmology Intertwined collaboration. I would describe myself as a fast learner and excellent collaborator.

## Education

### 2018 - 2022 Ph.D Candidate

[University of Ioannina](#)

*Ph.D Thesis:* " $\Lambda$ CDM and the Implications of the Hubble Tension"

*Supervisor:* Prof. Leandros Perivolaropoulos

### 2015 - 2017 Master's Degree in Theoretical and Mathematical Physics, Astronomy and Astrophysics

[University of Patras](#)

Upper First Class Honours, G.P.O was 8.87.

*M.Sc Thesis:* "Thermodynamic Properties of Self-Gravitating Systems", grade: 10/10

*Thesis Advisor:* Asst. Prof. Charis Anastopoulos

### 2010 - 2014 Bachelor's Degree in Physics

[University of Patras](#)

Upper Second Class Honours, top 4 percent of my class. My specialization was Theoretical and Mathematical Physics, Astronomy and Astrophysics. Specialization courses G.P.O was 8,36.

*B.Sc Thesis:* "Cosmological Perturbation Theory and Gravitational Waves", grade: 10/10, Indicative Courses and grades:

1. Astrophysics I: 8/10
2. Astrophysics II: 8.5/10
3. Computational Physics : 9.5/10
4. Elementary Particles and Cosmology: 8/10

## Publication Record

Eight papers (highlighted most important) with a total of more than 170 citations and h-index = 7. The codes used in the analysis of all the papers are publicly available at my [GitHub](#) page. Click [here](#) for my up to date InspireHEP profile.

1. **Constraining a late time transition of  $G_{\text{eff}}$  using low- $z$  galaxy survey data**, G. Alestas, L. Perivolaropoulos and K. Tanidis, arXiv: 2201.05846 (Under peer-review)
2. **Late-transition vs smooth  $H(z)$  deformation models for the resolution of the Hubble crisis**, G. Alestas, D. Camarena, E. Di Valentino, L. Kazantzidis, V. Marra, S. Nesseris and L. Perivolaropoulos, arXiv: 2110.04336 (Under peer-review)
3. **Hints for a gravitational constant transition in Tully-Fisher data**, G. Alestas, I. Antoniou and L. Perivolaropoulos, Universe 7 (2021) 366, DOI: 10.3390/universe7100366, (More than 10 citations)

4. **Late time approaches to the Hubble tension deforming  $H(z)$ , worsen the growth tension**, G. Alestas, L. Perivolaropoulos, Mon.Not.Roy.Astron.Soc. 504 (2021) 3, 3956-3962, DOI: 10.1093/mnras/stab1070, (More than 20 citations)
5. **A  $w-M$  phantom transition at  $z_t < 0.1$  as a resolution of the Hubble tension**, G. Alestas, L. Kazantzidis, L. Perivolaropoulos, Phys.Rev.D 103 (2021) 8, 083517, DOI: 10.1103/PhysRevD.103.083517, (More than 25 citations)
6. **Existence and Stability of Static Spherical Fluid Shells in a Schwarzschild-Rindler-anti-de Sitter Metric**, G. Alestas, G.V. Kraniotis, L. Perivolaropoulos, Phys.Rev.D 102 (2020) 104015, DOI: 10.1103/PhysRevD.102.104015, (More than 5 citations)
7.  **$H_0$  tension, phantom dark energy, and cosmological parameter degeneracies**, G. Alestas, L. Kazantzidis, L. Perivolaropoulos, Phys.Rev.D 101 (2020) 12, 123516, DOI: 10.1103/PhysRevD.101.123516, (More than 80 citations)
8. **Evading Derrick's theorem in curved space: Static metastable spherical domain wall**, Alestas G., Perivolaropoulos L., Phys.Rev.D 99 (2019) no.6, 064026, DOI: 10.1103/PhysRevD.99.064026, (More than 5 citations)

## Scholarships & Grants

- |         |   |
|---------|---|
| 2021-22 | <b>Fellow of the Greek State and the European Union (European Social Fund – ESF) through the Operational Programme "Competitiveness, Entrepreneurship and Innovation 2014-2020 (EPAnEK)"</b>  |
| 2020-21 | <b>Fellow of the Greek State and the European Union (European Social Fund – ESF) through the Operational Programme "Human Resources Development, Education and Lifelong Learning 2014-2020"</b>   |
| 2020    | <b>European Cooperation in Science &amp; Technology (COST) grant for a short term scientific mission (STSM) in the context of the action "CA15117 - Cosmology and Astrophysics Network for Theoretical Advances and Training Actions (CANTATA)" and the project "Search for Hints of Modified Gravity in Cosmological Data"</b> |

## Conferences Attended & Talks Given

- HEP 2020 - 38th Conference on Recent Developments in High Energy Physics and Cosmology, September 2021, Athens, Greece.
- 16th Marcel Grossmann Meeting - MG16, July 2021, Rome, Italy, **(Talk)**
- 19th online Conference in the String Phenomenology Conference Series, June 2020, Boston, United States.
- 9th Korea Institute of Advanced Study (KIAS) Workshop on Cosmology and Structure Formation webinar, November 2020, Seoul, South Korea
- Workshop on Quantum Fields and Nonlinear Phenomena, SEENET-MTP-CERN-ICTP Joint Meeting, 2020, Romania, **(Talk)**
- SEENET-MTP Balkan School on High Energy and Particle Physics: Theory and Phenomenology, 2019, Ioannina, **(Talk)**
- HEP 2019 - Recent Developments on High Energy Physics and Cosmology, 2019, Athens

## Research Interests

Theoretical Cosmology, Observational Cosmology, Hubble Tension, Modified Gravity Theories, Dark Energy, Data Analysis, Gravitational waves, Soliton Physics.

## Programming Knowledge

- Linux, Windows
- Python, C/C++, Fortran, HTML
- COSMOMC/CAMB, MontePython/Class, Mathematica, Matlab

## Skills

Cosmology, Theoretical Astrophysics, Computational Physics, General Relativity, Data Analysis

## Referee Work

I am a referee for the Monthly Notices of the Royal Astronomical Society (MNRAS) journal. For more details please click [here](#) to visit my Publons profile.

## Teaching Experience

- |         |  |
|---------|--|
| 2021-22 | <b>Teaching Assistant</b> <a href="#">University of Ioannina</a><br>Classical Electrodynamics I (5th Semester Core Course – 52), my duties were:<br>1. The tutoring of third year students.<br>2. The grading of weekly assignments. |
| 2021-22 | <b>Teaching Assistant</b> <a href="#">University of Ioannina</a><br>Gravity and General Theory of Relativity (Advanced Undergraduate Elective Course – 106), my duties were:<br>1. The grading of weekly assignments and reports.    |
| 2020-21 | <b>Teaching Assistant</b> <a href="#">University of Ioannina</a><br>Cosmology (Advanced Undergraduate Elective Course – 105), my duties were:<br>1. The grading of weekly assignments and reports.                                   |
| 2020-21 | <b>Teaching Assistant</b> <a href="#">University of Ioannina</a><br>Gravity and General Theory of Relativity (Advanced Undergraduate Elective Course – 106), my duties were:<br>1. The grading of weekly assignments and reports.    |
| 2019-20 | <b>Teaching Assistant</b> <a href="#">University of Ioannina</a><br>Classical Electrodynamics I (5th Semester Core Course – 52), my duties were:<br>1. The grading of weekly assignments and reports.                                |

2016-17

**Teaching Assistant**

University of Patras

Astrophysics Laboratory (TAE450), my duties were:

1. The tutoring of third and fourth year students.
2. The grading of weekly assignments and reports.

2016-17

**Teaching Assistant**

University of Patras

Astronomy Laboratory (TAE451), my duties were:

1. The tutoring of third and fourth year students.
2. The grading of weekly assignments and reports.
3. Demonstrating the use of Astronomical equipment.

## Societies

- Student Member of the American Physical Society (APS)
- Junior Member of the Hellenic Society on Relativity, Gravitation and Cosmology

## Professional References

Prof. Leandros Perivolaropoulos - **leandros@uoi.gr** (PhD Advisor)

Dr. Eleonora Di Valentino - **E.Divalentino@shef.ac.uk**

Asst. Prof. Savvas Nesseris - **savvas.nesseris@csic.es**

Asst. Prof. Panagiota E. Christopoulou - **pechris@physics.upatras.gr**