

Anastasios Theodoropoulos

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SUMMARY

I am a Physics graduate student in Sorbonne University with an interest in the theoretical and astrophysical aspects of cosmology and gravitational waves, as well as the exploration of data analysis techniques that may prove useful in their study.

PROJECTS

Bachelor Thesis

[Code Available](#)

"Accelerating expansion of the Universe, Dark Energy and analysis of observational cosmological data". In my Bachelor thesis I studied different Dark Energy models, such as Quintessence, constraining their parameters with recent cosmological data coming from Type Ia supernovae observations, as well as from Baryonic Acoustic Oscillation (BAO) and Cosmic Microwave Background (CMB) anisotropies data.

M2 Internship

[Code Available](#)

"Machine learning for Photometric Redshift estimation of LSST galaxies."

In my M2 internship, I explored different types of Convolutional Neural Networks applied to the Photometric redshift estimation of galaxies.

CMB Extraction

Part of my Master's computer project at Institute d'Astrophysique Spatiale (IAS).

Extraction of the Cosmic Microwave Background radiation map and its power spectrum from the Planck satellite data.

EDUCATION

- 2021 - 2022 M2 Nuclei, Particles, Astroparticles and Cosmology (NPAC) at **Sorbonne University**
Awards: Sorbonne Universite SFRI/DSI fellowship, "bourse d'excellence" from the Sorbonne Universite Initiative Physique des Infinis (IPI) Institute.
M2 Internship: "Machine learning for Photometric Redshift estimation of LSST galaxies."
Relevant coursework: Cosmology, General Theory of Relativity, Particle Physics, Advanced Cosmology
- 2017 - 2021 Bachelor's Degree in Physics at **University of Ioannina** (Grade:"Excellent" 8.68/10)
Honours: Graduated with the highest grade among the Fall graduates
Bachelor Thesis: "Accelerating expansion of the Universe, Dark Energy and analysis of observational cosmological data."
Relevant coursework: Cosmology, Gravity and General Theory of Relativity, Quantum Field Theory, C, C++
- 2014 - 2017 High-school diploma from 2nd High School of Agrinio (19.4/20)

PUBLICATIONS

Theodoropoulos, Anastasios and Leandros Perivolaropoulos (2021). "The Hubble Tension, the M Crisis of Late Time $H(z)$ Deformation Models and the Reconstruction of Quintessence Lagrangians". In: *Universe* 7.8, p. 300. DOI: [10.3390/universe7080300](#). arXiv: [2109.06256 \[astro-ph.CO\]](#).

SKILLS

Computer Skills

Windows, Linux

- Programming Languages: Python, C, C++
 - Scientific Software/Packages: Wolfram Mathematica, SageMath, LaTeX, TensorFlow, Git
- Languages
- Native Language: Greek
 - Fluent: English

CONFERENCES/SCHOOLS

22nd Hellenic School and Workshops on Elementary Particle Physics and Gravity (2022)

Attended the: "Workshop on Tensions in Cosmology"

Onassis Foundation Lecture Series (2022)

Attended: "The 2022 Lectures in Physics: Gravitational Waves"

36th Hellenic Conference of Greek Mathematical Society (2019)

Gave a talk about: "Unsolved Problems in teaching Mathematics."

HELLAS-CH organisation seminar (2019)

"Interaction of laser beams with matter: accomplishments and prospects"

Hellenic Institute of Nuclear Physics School (HINP) (2018)

Attended the HINP 2018 school.

32nd Hellenic Conference of Greek Mathematical Society (2015)

Gave a talk about: "Mathematical Models of the real world in secondary education."

OTHER HIGHLIGHTS

Cosmology group University of Ioannina (2020-2021)

Former member

Greek Cadet Wrestling Championship (2018)

Bronze medal

Hellenic Mathematical Olympiad (2015-2017)

Participation after two qualifying competitions

Hellenic Physics Competition (2014, 2017)

Honours

Hellenic Red Cross (2016)

Attended a First-Aid and CPR educational program.

PROFESSIONAL REFERENCES

Leandros Perivolaropoulos

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Bachelor thesis supervisor

Delphine Hardin

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M2 responsible

Simona Mei

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M2 Internship supervisor