

Rafid H. Dejarah

LinkedIn: [Rafid H. Dejarah](#) | rdejarah@ictp.it | <https://www.rafid-hasan.com>

Research Interests

I am broadly interested in theoretical cosmology, with particular interest in early-Universe physics, inflation, gravity, particle cosmology, and their observable consequences.

Education

The Abdus Salam International Centre for Theoretical Physics (ICTP) <i>Pre-PhD Student, Postgraduate Diploma Programme in High Energy, Cosmology and Astroparticle Physics</i>	Trieste, Italy 2026 – 2027
Department of Physics, Ankara University <i>B.Sc. in Physics (Valedictorian of the Faculty of Science.)</i>	Ankara, Türkiye 2022 – 2026
Faculty of Physics and Applied Informatics, University of Lodz <i>Exchange academic semester within the Erasmus+ programme</i>	Lodz, Poland 2023 – 2024

Publications

Authors are ordered alphabetically except †

Peer-Reviewed and Preprints

- [7.] [Rafid H. Dejarah](#) and Anish Ghoshal
Gauge backreaction in Standard-Model Warm Inflation
[ARXIV: 2609.35756](#)
- [6.] Nilay Bostan, [Rafid H. Dejarah](#), Anish Ghoshal, and Zygmunt Lalak
Induced Multi-phase Inflation with Reheating: Leptogenesis and Dark Matter Production in Metric versus Palatini
[ARXIV: 2604.09843](#)
- [5.] N. Bostan, [R. H. Dejarah](#), C. Dioguardi, and A. Racioppi
Natural inflation in Palatini $F(R)$
JCAP **03** (2026) 038
[ARXIV: 2511.20557](#) DOI: [10.1088/1475-7516/2026/03/038](https://doi.org/10.1088/1475-7516/2026/03/038)
- [4.] Nilay Bostan, [Rafid H. Dejarah](#), and Anish Ghoshal
Grand Unification Higgs- $\mathcal{R}^2$ Inflation: Complementarity between Proton Decay and CMB Observables
Phys. Rev. D **113** (2026) 055042
[ARXIV: 2511.05673](#) DOI: [10.1103/nx7w-xstd](https://doi.org/10.1103/nx7w-xstd)
- [3.] N. Bostan, [R. H. Dejarah](#), C. Dioguardi, and A. Racioppi
Natural inflation in Palatini $F(R, X)$
JCAP **07** (2025) 082
[ARXIV: 2503.16324](#) DOI: [10.1088/1475-7516/2025/07/082](https://doi.org/10.1088/1475-7516/2025/07/082)
- [2.] † M. G. Dainotti *et al.* (including [Rafid H. Dejarah](#))
A New Master Supernovae Ia Sample and the Investigation of the H_0 Tension
JHEAp **48** (2025) 100405
[ARXIV: 2501.11772](#) DOI: [10.1016/j.jheap.2025.100405](https://doi.org/10.1016/j.jheap.2025.100405)
Contribution: Led methodology development, formal analysis, data curation, and visualization.
- [1.] Nilay Bostan and [Rafid H. Dejarah](#)
Inflationary dynamics and observables: β -exponential models in Palatini R^2 gravity
Nucl. Phys. B **1018** (2025) 117056
[ARXIV: 2409.10398](#) DOI: [10.1016/j.nuclphysb.2025.117056](https://doi.org/10.1016/j.nuclphysb.2025.117056)

Reviews

[1.] C. Albertus *et al.* (including Rafid H. Dejarah)
WISPEdia – the WISPs Encyclopedia
[ARXIV: 2602.09089](#)
Contribution: Contributed to inflationary paradigms and spin-0 scalar sections; involved in literature synthesis and manuscript development.

Invited Talks

Ankara University	2025
Seminar, “Don’t Blame Schrödinger”.	
Ankara University	2025
Poster, “Palatini β –Exponential Inflation with an R^2 Term: Observational Tests”.	
COST Action 21106	2025
Journal Club, “Minimally coupled β -exponential inflation with an R^2 term in the Palatini formulation”.	
Ankara University	2024
The European Day, “The Erasmus+ experience”.	

Awards and Honors

ICTP Pre-PhD fellowship	September 2026
Faculty Valedictorian, Faculty of Science, Ankara University.	July 2026
Publication Incentive Award (UBYT) by the Scientific and Technological Research Council of Türkiye (TÜBİTAK).	February 2026
Erasmus+ Grant for academic research.	April 2025
Erasmus+ Grant for one academic semester in Poland.	September 2023
YTB-IsDB Scholarship	August 2021

Summer Schools and Meetings

The Mathematical Village	Aug 2025
Undergraduate and Graduate summer school	
Istanbul Technical University	June 2025
CosmoVerse@Istanbul	
Istinye University	September 2024
2nd General Meeting of COST Action COSMIC WISPs (CA21106).	

Conferences and Programs

SOKENDAI (Virtually)	February 2025
SOKENDAI Asian Winter School 2025.	
YTB	August 2024
The International Student Internship Program.	

Skills

- **Programming:** Python, Mathematica, C++

References

Available upon request.