# Alessandro Vadalà

Ph.D. Candidate · Astronomy, Astrophysics & Space Science

(+39) 329-1931392 | alessandro.vadala@inaf.it | www.alessandrovadala.com | alevadala

## Education

**Doctoral joint program: La Sapienza - Tor Vergata - INAF - ASI** *Rome*

PhD in Astronomy, Astrophysics & Space Science *2023 - present*

- Advisors: Dr. Vincenzo F. Cardone, Prof. Roberto Maoli
- Thesis: Higher-order statistics in weak lensing from the Euclid survey

**University of Rome La Sapienza** *Rome*

MSc in Astronomy & Astrophysics (*with honors)* *2023*

- Advisors: Prof. Roberto Maoli, Dr. Matteo Martinelli, Dr. Vincenzo F. Cardone
- Thesis: Impact of Horndeski stability conditions on cosmological constraints of modified gravity

## Publications

Di Valentino, Eleonora, Jackson Levi Said, Adam Riess, et al. (2025). "The CosmoVerse White Paper: Addressing observational tensions in cosmology with systematics and fundamental physics". In: *Physics of the Dark Universe* 49, 101965, p. 101965. DOI: 10.1016/j.dark.2025.101965. arXiv: 2504.01669 [astro-ph.CO].

Vadalà, Alessandro et al. (in prep.[a]). "Covariance estimates for third-order shear statistics of Euclid DR1 data". In: *A/A*.

– (in prep.[b]). "Weak lensing higher-order statistics to disentangle modified gravity and massive neutrinos". In: *JCAP*.

Vinciguerra, S. et al. (2025). "Euclid preparation: Towards a DR1 application of higher-order weak lensing statistics". In: *A&A*. arXiv: 2510.04953 [astro-ph.CO].

## Talks & Posters

Vadalà, A. (01/2024). *Impact of Horndeski stability conditions on CMB constraints*. EFTCAMB 10 Meeting, Leiden.

– (02/2024). *Higher-order statistics sensitivity to Modified Gravity*. UniVersum V, Rome.

– (02/2025). *Higher-order statistics sensitivity to modified gravity*. LAM Geco Talks, Marseille.

– (04/2025). *Higher-order statistics sensitivity to modified gravity*. UniVersum VI, Padova.

– (07/2024). *Modified gravity with higher-order statistics*. (Poster) CosmoVerse Meeting, Krakow.

– (09/2025). *Weak lensing higher-order statistics with modified gravity and massive neutrinos*. DarkMap Conference, Budapest.

## Grants & Awards

2025 **COST Action STSM Grant**, COST Action CA21136

2024 **CosmoVerse School Grant**, CosmoVerse COST Action

## PhD Schools

Jun 2025 **Astrostatistics School**, Heraklion, Crete, Greece

Dec 2024 **Tonale Winter School on Cosmology**, Passo del Tonale, Italy

Sep 2024 **5th Azores School on Observational Cosmology**, Angra do Heroísmo, Açores, Portugal

May 2024 **CosmoVerseSchool@Corfu**, Mons-Repos, Corfu, Greece

## Skills

Proficient in Python; limited knowledge of C and Julia; basic knowledge of Fortran

Experience with Boltzmann codes and modifications: CLASS, CAMB, MGCLASS, MGCAMB

Experience with sampling and statistical modeling codes, e.g.: COBAYA

Experience with software and libraries for astrophysics, e.g.: pyCCL, astropy, JAX

Experience with Microsoft and Linux OS: Debian and Ubuntu distributions

## Outreach & Events

### Outreach

2024-today **INAF Observatory and Astronomical Museum in Rome**, Official INAF guide

2024-today **Collaborating in outreach events, in loco and on social media**, Volunteer on behalf of INAF

2024-2025 **European Researchers' Night**, Volunteer on behalf of INAF

2024 **Rome Science Festival**, Volunteer on behalf of INAF

### Events organization

2024 **Euclid Consortium Meeting**, Organizer *Rome*

## Languages

Italian: Native/Bilingual proficency

English: Full working proficiency

French: Limited working proficiency