

# GIOVANNI ALBERTO VERZA

## PERSONAL INFORMATION

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**Date of Birth:** September, 7<sup>th</sup>, 1989  
**Nationality:** Italy  
**Civil status:** Married  
**Languages:** Italian (Native), English  
**Address:** via Euganea 36, 35141, Padova (PD)  
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**Website:** <https://giovanni-verza.github.io/>

## RESEARCH WORK AND EDUCATION

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<b>PostDoc</b> INFN sezione di Padova	2022 – now
<b>PhD in Physics</b> Università degli Studi di Padova Thesis defense: 2022-09-02	2018 – 2022
<b>Master in Physics</b> Università degli Studi di Milano	2016 – 2018
<b>Bachelor in Theology</b> Facoltà Teologica dell'Italia Settentrionale	2011 – 2016
<b>Bachelor in Physics</b> Università degli Studi di Milano Bicocca	2008 – 2011

## DIGITAL SKILLS

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**Frequently used languages:** Python, C++, Bash, Mathematica  
**Containerization:** Singularity, Docker  
**Python accelerators/wrapping:** numba, Pybind11, multiprocessing  
**Scientific codes:** CAMB, CLASS, Pylans, VIDE, CorrFunc, CUTE, PowerI4, various cosmological emulators, etc.  
**Parallel computing:** OpenMP, numba, multiprocessing, basics of MPI  
**GPU accelerators:** basics of CUDA and of OpenACC  
**General expertise:** Linux systems, Window systems, High Performance Computing, git, Github, etc,

## SCIENTIFIC PRODUCTION

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### Refereed Publications

- **G. Verza**, C. Carbone, A. Renzi, *The Halo Bias inside Cosmic Voids*, ApJL, 940, L16 (2022), DOI:[10.3847/2041-8213/ac9d98](https://doi.org/10.3847/2041-8213/ac9d98), arXiv:[2207.04039](https://arxiv.org/abs/2207.04039).
- M. Bonici, C. Carbone, S. Davini, P. Vielzeuf, L. Paganin, V. F. Cardone, N. Hamaus, A. Pisani, A. Hawken, A. Kovács, A. Caminata, S. di Domizio, M. Pallavicini, G. Testera, S. Tosi, M. Aubert, S. Contarini, **G. Verza**, I. Tutusaus, S. Escoffier, S. Clesse, V. Pettorino, Z. Sakr, D. Sapone, V. Yankelevich, et al., *Euclid: Forecasts from the void-lensing cross-correlation*, Accepted for publication in A&A, arXiv:[2206.14211](https://arxiv.org/abs/2206.14211).
- S. Contarini, **G. Verza**, A. Pisani, N. Hamaus et al., *Euclid: Cosmological forecasts from the void size function*, A&A 667, A162 (2022), DOI:[10.1051/0004-6361/202244095](https://doi.org/10.1051/0004-6361/202244095), arXiv:[2205.11525](https://arxiv.org/abs/2205.11525).
- N. Hamaus, M. Aubert, A. Pisani, S. Contarini, **G. Verza** et al., *Euclid: Forecasts from redshift-space distortions and the Alcock-Paczynski test with cosmic voids*, A&A 658, A20 (2022), DOI:[10.1051/0004-6361/202142073](https://doi.org/10.1051/0004-6361/202142073), arXiv:[2108.10347](https://arxiv.org/abs/2108.10347).
- **G. Verza**, A. Pisani, C. Carbone, N. Hamaus, L. Guzzo, *The void size function in dynamical dark energy cosmologies*, JCAP12(2019)040, DOI:[10.1088/1475-7516/2019/12/040](https://doi.org/10.1088/1475-7516/2019/12/040), arXiv:[1906.00409](https://arxiv.org/abs/1906.00409).

## SCIENTIFIC COLLABORATIONS

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### **Euclid Consortium Member**

from 2018

Galaxy clustering science working group, Voids work package.

- Co-lead of the Euclid Standard Project *Euclid: Forecasts from redshift-space distortions and the Alcock-Paczynski test with cosmic voids*.

## PRESENTATIONS

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### **Cosmology with cosmic void statistics**

November 2022

Invited talk, LMU Munich

### **The halo bias inside cosmic voids**

October 2022

GC-SWG voids group (Online)

### **Cosmology with cosmic void statistics in galaxy surveys**

September 2022

PUMA22, Sestri Levante (Italy)

### **Euclid: Cosmological forecasts from the void size function**

May 2022

Euclid Consortium Meeting, Oslo (Norway)

### **Cosmology with cosmic void statistics**

May 2022

Euclid Consortium Meeting, Oslo (Norway)

### **The Void Size Function in Dynamical Dark Energy Cosmologies**

September 2020

Convegno SIF online

### **The Void Statistics in Dynamical Dark Energy Models**

February 2020

3<sup>th</sup> Meeting Nazionale Collaborazione Euclid, Bologna (Italy)

### **The Void Size Function in Dynamical Dark Energy Cosmologies**

February 2020

Euclid Joint Meeting, Paris (France)

### **Cosmic voids to probe Dark Energy**

April 2019

UniVersum, Milano (Italy)

## CONFERENCES AND WORKSHOPS

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### **PUMA22: Probing the Universe with Multimessenger Astrophysics**

September 2022

Sestri Levante (Italy)

### **Euclid Consortium Meeting**

May 2022

Oslo (Norway)

### **Euclid Consortium Meeting**

May 2021

Remote form (Lausanne, Swiss)

### **4<sup>th</sup> Meeting Nazionale Collaborazione Euclid**

February 2021

Remote form

### **Convegno SIF**

September 2020

Remote form

### **Euclid Consortium Meeting**

May 2020

Remote form (Barcellona, Spain)

### **3<sup>rd</sup> Meeting Nazionale Collaborazione Euclid**

February 2020

Bologna (Italy)

### **Euclid Joint Meeting**

February 2020

Paris (France)

### **Fundamental Physics with Future CMB Probes**

October 2019

SISSA Trieste (Italy)

### **UniVersum**

April 2019

Milano (Italy)

### **Euclid and Beyond. The Many Faces of Modern Cosmology**

February 2019

CNR Roma (Italy)

## SCHOOLS

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<b>Programming paradigms for GPU devices</b> CINECA remote form (Bologna, Italy)	November 2021
<b>17<sup>th</sup> advanced school on parallel computing</b> CINECA remote form (Bologna, Italy)	March 2021
<b>Containerization in high performance computing</b> CINECA remote form (Bologna, Italy)	November 2020
<b>Advanced Euclid School: The Science of Future Cosmological Surveys</b> Remote form (Les Houches, France)	June 2020
<b>Astrostatistics school: Bayesian Methods for the Physics Sciences</b> Milano (Italy)	June 2019
<b>Theoretical Aspects of Astroparticle Physics, Cosmology and Gravitation</b> GGI Firenze (Italy)	March 2019
<b>N-body techniques for astrophysics</b> Course of PhD school in Astronomy, Università di Padova (Italy)	October 2018

## EDUCATION & OUTREACH EXPERIENCE

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<b>Conference: Illuminiamo l'Universo Oscuro.</b> "Let's light up the Dark Universe".	December 2021
<b>Student meetings</b> Introduce master's students to scientific papers readings, Arxiv, and scientific project planning.	2021
<b>Volunteer after-school educator</b> Coordination of homework and play time for children aged 6 to 13.	2013-2015
<b>Private tutoring</b> Private tutoring of Math and Physics to high-school students.	2009-2018

## REFERENTS

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<b>Carmelita Carbone</b> INAF-IASF, Università degli Studi di Milano	carmelita.carbone@inaf.it
<b>Alice Pisani</b> Cooper, CCA, Princeton	apisani@astro.princeton.edu
<b>Sabino Matarrese</b> Università degli Studi di Padova, INFN sezione di Padova	sabino.matarrese@pd.infn.it

*Giovanni Alberto Tavecchio*