Giovanni Alberto Verza

Personal Information

Date of Birth: September, 7th, 1989
Nationality: Italy
Civil status: Married
Languages: Italian (Native), English
Address: via Euganea 36, 35141, Padova (PD)
E-mail: giovanni.verza@pd.infn.it, giova.verza@gmail.com
ORCID: https://orcid.org/0000-0002-1886-8348
Website: https://giovanni-verza.github.io/

Research work and Education

PostDoc 2022 – now
INFN sezione di Padova

PhD in Physics 2018 – 2022
Università degli Studi di Padova
Thesis defense: 2022-09-02

Master in Physics 2016 – 2018
Università degli Studi di Milano

Bachelor in Theology 2011 – 2016
Facoltà Teologica dell'Italia Settentrionale

Bachelor in Physics 2008 – 2011
Università degli Studi di Milano Bicocca

Digital Skills

Frequently used languages: Python, C++, Bash, Mathematica
Containerization: Singularity, Docker
Python accelerators/wrapping: numba, Pybind11, multiprocessing
Scientific codes: CAMB, CLASS, Pylians, VIDE, CorrFunc, CUTE, PowerI4, various cosmological emulators, etc.
Parallel computing: OpenMP, numba, mutiprocessing, 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

Refereed Publications

- **G. Verza**, C. Carbone, A. Renzi, *The Halo Bias inside Cosmic Voids*, ApJL, 940, L16 (2022), DOI:10.3847/2041-8213/ac9d98, arXiv:2207.04039.
- M. Bonici, C. Carbone, S. Davini, P. Vielzeuf, L. Paganin, V. Cardone, N. Hamaus, A. Pisani, A.J. Hawken, A. Kovacs, S. Nadathur, S. Contarini, **G. Verza**, I. Tutusaus, F. Marulli, L. Moscardini, M. Aubert, C. Giocoli, A. Pourtsidou, S. Camera, et al., *Euclid: Forecasts from the void-lensing cross-correlation*, A&A Forthcoming article, DOI:10.1051/0004-6361/202244445, arXiv: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, arXiv:2205.11525.
- N. Hamaus, M. Aubert, A. Pisani, S. Contarini, **G. Verza** et al., *Euclid: Forecasts from redshift-space distortions and the Alcock-Paczinski test with cosmic voids*, A&A 658, A20 (2022), DOI:10.1051/0004-6361/202142073, arXiv: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, arXiv:1906.00409.

Preprints

- **G. Verza**, C. Carbone, A. Pisani, A. Renzi, *DEMNUni: disentangling dark energy from massive neutrinos with the void size function*, arXiv:2212.09740.

Scientific collaborations

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-Paczinski test with cosmic voids*.

Presentations

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$^{\text{th}}$ 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

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$^{\text{th}}$ Meeting Nazionale Collaborazione Euclid February 2021
Remote form

Convegno SIF September 2020
Remote form

Euclid Consortium Meeting May 2020
Remote form (Barcellona, Spain)

3$^{\text{rd}}$ 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

Programming paradigms for GPU devices November 2021
CINECA remote form (Bologna, Italy)

17th advanced school on parallel computing March 2021
CINECA remote form (Bologna, Italy)

Containerization in high performance computing November 2020
CINECA remote form (Bologna, Italy)

Advanced Euclid School: The Science of Future Cosmological Surveys June 2020
Remote form (Les Houches, France)

Astrostatistics school: Bayesian Methods for the Physics Sciences June 2019
Milano (Italy)

Theoretical Aspects of Astroparticle Physics, Cosmology and Gravitation March 2019
GGI Firenze (Italy)

N-body techniques for astrophysics October 2018
Course of PhD school in Astronomy, Università di Padova (Italy)

EDUCATION & OUTREACH EXPERIENCE

Conference: Illuminiamo l'Universo Oscuro. December 2021
"Let's light up the Dark Universe".

Student meetings 2021
Introduce master's students to scientific papers readings, Arxiv, and scientific project planning.

Volunteer after-school educator 2013-2015
Coordination of homework and play time for children aged 6 to 13.

Private tutoring 2009-2018
Private tutoring of Math and Physics to high-school students.

REFERENTS

Carmelita Carbone carmelita.carbone@inaf.it
INAF-IASF, Università degli Studi di Milano

Alice Pisani apisani@astro.princeton.edu
Cooper, CCA, Princeton

Sabino Matarrese sabino.matarrese@pd.infn.it
Università degli Studi di Padova, INFN sezione di Padova