

Albino Perego

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University of Trento
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Appointments

- December 2018–present **Assistant Professor (Ricercatore Tempo Determinato tipo B)**
Department of Physics
University of Trento
- July 2017– December 2018 **Postdoctoral Research Associate (Assegnista di Ricerca)**
Istituto Nazionale di Fisica Nucleare (INFN)
Sezione di Milano Bicocca e Gruppo Collegato di Parma
Theoretical Nuclear and Relativistic Astrophysics
- January 2013–June 2017 **Postdoctoral Research Associate**
Technische Universität Darmstadt
Institute for Nuclear Physics – Theory center
Theoretical Nuclear Astrophysics
- October 2008–December 2012 **Postgraduate Researcher and Teaching Assistant**
Basel University
Physics Department
Theoretical Physics, Theoretical Nuclear Astrophysics group
- May–September 2008, **Postgraduate Scholarship**
University of Milano-Bicocca
Theoretical Astrophysics

Education

Ph.D. Theoretical Physics

Basel University

Thesis title: *"Neutrino treatment in multidimensional astrophysical simulations: a new spectral approach"*

Supervisor: [REDACTED]

Received: 13 December 2012, Grade: Summa Cum Laude

Laurea Specialistica in Fisica (M.Sc. in Physics)

University of Milano.

Curriculum: Theoretical Physics.

Thesis title: *"Spin evolution in supermassive black hole binaries"*

Supervisors [REDACTED]

Received: April 2008, Grade: 110/110 Cum Laude

Laurea Triennale in Fisica (B.S. in Physics)

University of Milano.

Thesis title: *"Production of W +jets in hadron colliders"*

Supervisors: [REDACTED]

Received: October 2005, Grade: 110/110 Cum Laude

Research Interests

Theoretical and Nuclear Astrophysics, High Energy Astrophysics, Relativistic Astrophysics, Computational Physics, Neutrino Physics, Binary Neutron Star Mergers, Supernovae

Grants, Honours, & Awards

September 2019, **Abilitazione Scientifica Nazionale (ASN) for Associate Professor, class 02/A2 (Theoretical Physics of Fundamental Interactions)**

September 2019, **Abilitazione Scientifica Nazionale (ASN) for Associate Professor, class 02/C1 (Astronomy, Astrophysics, Earth and planetary Physics)**

April 2018, Best Presentation Prize, XVII Incontri di Fisica delle Alte Energie 2018 (IFAE 2018), Milano Bicocca, Italy

June 2016, First price for the Best Poster Award, XIV Nuclei in the Cosmos Symposium, Niigata, Japan

2010, 2011 & 2012, Best Teaching Assistant Award, Basel University, Switzerland

January 2010, Compstar Short Visit Grant to visit Jacobs University, Bremen, Germany

HPC Grants at the TGCC Supercomputing Center (France)

(here and below: Peer-reviewed, SU = service units or core-hours, PI = principal investigator, CI = co-investigator)

April 2020 – March 2021, PI of the PRACE proposal “MicroBNS”, 15M SU @ Irene-AMD-Rome (TGCC)

HPC Grants at the Gauss Supercomputing Center (Germany)

November 2018 – November 2019, CI of the proposal “Simulating gravitational-wave and electromagnetic signals from neutron star collisions”, 75M SU @ Leibnitz Supercomputing Center (LRZ)

HPC Grants at the Italian Supercomputing Center (CINECA)

August 2018 – July 2019, PI of the proposal “TASMANIA: targeted simulation in Numerical Relativity”, 4.5M SU

HPC Grants at the Swiss Supercomputing Center (CSCS)

April 2016–March 2018, PI of the proposal “Neutrinos in the aftermath of neutron star mergers”, 10M SU

April 2013–March 2016, CI of the proposal “Matter accretion on compact objects: the role on neutrinos, magnetic field and equation of state”, 36M SU

April 2013–March 2016, CI of the proposal “ELEPHANT: a 3D supernova model for efficient parameter studies with spectral neutrino transport”, 15M SU

January 2010–December 2012, CI of the proposal “Productive 3D models of stellar explosions“

Publications

77 articles published (or accepted for publication) in peer-reviewed journals or books (November 2009 – May 2021)

9 articles as first author

19 articles as second or third author

50 short author list papers

27 collaboration papers

15 articles submitted to peer-reviewed journals (May 2021)

15 published conference proceedings

> 4900 citations (Scopus, May 2021)

h-index: 30 (Scopus, May 2021)

Memberships

International Collaborations

Member of ENGRAVE, *Electromagnetic Counterparts of Gravitational Wave sources at the Very Large Telescope*, the largest European Consortium for the electromagnetic follow-up and interpretation of gravitational wave sources, since March 2018. Coordinator of the Theory Working group since September 2018.

Member of GRAWITA, *Gravitational Wave INAF Team*, Italian team for the electromagnetic follow-up and interpretation of gravitational sources, since November 2017.

Member of Virgo Collaboration (Prometeo theory group) since November 2018.

Member of INFN TEONGRAV Initiative since July 2017. Responsabile locale for INFN-TIFPA since 2020.

Member of *CoRe* (Computational Relativity) collaboration since July 2017.

Research Networks

Member of PHAROS, *The multi-messenger physics and astrophysics of neutron stars* (ESF-COST Action CA16214) since January 2018.

Member of GWVerse, *Gravitational waves, black holes and fundamental physics* (COST Action CA16104), Group leader of WG1c (Numerical relativity/SPH with GR+matter+plasma) since January 2018.

Member of NewCompStar, *Exploring fundamental physics with compact stars* (MPNS COST Action MP1304), 2013–2017

Member of Supernova HP2C Project, Basel University, January 2010–December 2012

Member of CompStar, *The physics of compact stars* (ESF-funded RPN Action), 2009–2012

Member of EuroGrad Doctoral School, Basel University, October 2008–October 2010

Professional services

January 2020–present, Local Responsible for the Teongrav-INFN initiative for TIFPA INFN unit

September 2019–present, Coordinator of the theoretical group of the Engrave-ESO Consortium

Fall 2019–present, Organization of department Colloquia, Physics Department, Trento University

July 2018–December 2019, Local Responsible for the Virgo-INFN Group at the Milano Bicocca INFN unit

January 2018, Organization of the workshop *Four challenges in gravitational-wave astronomy with neutron stars*, Parma, 16-17 January 2018

2015–present, Referee for Physical Review Letter, Physical Review C and D, The International Journal of Modern Physics D, Journal of Physics G: Nuclear and Particle Physics, The Astrophysical Journal, The Astrophysical Journal Letters, Monthly Notices of the Royal Astronomical Society, Monthly Notices of the Royal Astronomical Society Letters, Journal of High-Energy Astrophysics, General Relativity and Gravitation

Spring Semester 2011, Organizer of the Journal Club Seminars, Basel University

Seminar, Conference and Colloquium Presentations

20 Invited Talks at International Conferences and Workshops

27 Seminars and one Colloquium at International Academic Institutions

27 Contributing Talks at National and International Conferences and Workshops

3 Posters presented at International Conferences and Workshops

Teaching

International Graduate School

July 2021, 6 hours Lecture at the SIGRAV PhD school: *De Multis Sidereis Nunciis* on Multimessenger Astrophysics, Como, Villa del Grumello

March 2019, 4 hours Lecture at the Pharos PhD school: *Multimessenger Physics and Astrophysics with Compact binary mergers*, Jena (DE)

November 2018, 6 hour lecture at the Pharos Training school: *Electromagnetic counterparts of neutron star mergers*, Bertinoro (IT)

May 2018, 2 hour lecture at the *Waves on the lake* SIGRAV school, Como, Villa del Grumello (Lecture: Modelling of binary neutron star mergers in numerical relativity, in collaboration with [REDACTED])

March 2018, Tutor at the *Frontiers in Nuclear and Hadronic Physics* school, Firenze, Galileo Galilei Institute (Lecture: Nuclear Astrophysics, in collaboration with: [REDACTED])

March 2017, 45' Lecture at Rußbach School on Nuclear Astrophysics, Rußbach am PaßGschütt (AT)

Università degli Studi di Trento

January-March 2021, 24 hours lectures on The Nuclear Astrophysics of Compact Binary Mergers (PhD course)

Since 2019, 56 hours lectures on Quantum Field Theory (Master degree lectures)

Since 2020, 28 hours lectures on General Physics III (Bachelor degree lectures)

Università degli Studi di Parma

Spring Semester 2018, 4 hours lecture on Nucleosynthesis in Supernovae and binary Compact Mergers for the course: Selected themes in Theoretical Physics ([REDACTED])

Università degli Studi di Milano Bicocca

Spring Semester 2018, 2 hours lecture for the Gravitational Waves course ([REDACTED])

Fall Semester 2017, 10 hours lecture on Supernovae for the Stellar Astrophysics course ([REDACTED])

TU Darmstadt

Fall Semester 2015, Teaching Assistant, General Relativity ([REDACTED])

Spring Semester 2013 & 2015, Teaching Assistant, Introduction to Theoretical Astrophysics ([REDACTED])

Fall Semester 2013 & 2014, Tutor for Students, Computational aspects of strong interaction physics

Spring Semester 2013, Tutor for Students, Nuclear Structure and Nuclear Astrophysics

Basel University

Spring Semester 2009, 2010 & 2012, Teaching Assistant, Nuclear Astrophysics II ([REDACTED])

Fall Semester 2011, Teaching Assistant, Nuclear Astrophysics I ([REDACTED])

Spring Semester 2011, Teaching Assistant, Electrodynamics ([REDACTED])

Fall Semester 2010, Teaching Assistant, Introduction to Astrophysical Plasma ([REDACTED])

Fall Semester 2009, Teaching Assistant, Mathematical Method III ([REDACTED])

Student Mentoring and Advising

PhD students

advisor of one PhD students (██████████, University of Trento since Nov 2020)
external co-advisor of one PhD students (██████████, Stockholm University)
mentor of 4 PhD students (GSSI-L'Aquila and TU-Darmstadt)

Master students

advisor of 4 master students (Trento University)
co-advisor of 5 master students (Milano-Bicocca University, Trieste University, TU Darmstadt)
mentor of one master students (TU-Darmstadt)

Bachelor students

advisor of 5 bachelor students (Trento University)
co-advisor of 4 bachelor students (Milano-Bicocca University, TU Darmstadt)

Outreach

October 2018, Educational article for the INFN magazine *Asimmetrie* on the topic "Multimessenger"
October 2018, Interview for the Italian magazine *Focus* about Neutron stars
3 May 2018, Public talk "Binarie di stelle di neutroni in coalescenza: laboratori cosmici di fisica fondamentale per la neonata astrofisica multimessenger", University of Milano, Milano
13 November 2017, Master class "GW170817: cosa è successo il 17 Agosto 2017 e perché è così importante per l'astrofisica del futuro", Osservatorio Astronomico di Brera, Milano
16 Ottobre 2017, "Gravity under a new light: nuovi segnali dal cosmo", public event to announce the first binary neutron star observation, University of Parma, Parma
29 September 2017, participation to the European Researchers' night, University of Parma, Parma
24 October 2016, Talk "Aspettando l'onda: binary NS mergers come laboratorio di fisica fondamentale", Public event "GR100+1: Suoni dal Cosmo", University of Milano-Bicocca
23-25 June 2011, Public exhibition for the Scientific Committee of the EU parliament, Royal Belgian Institute for Natural Science, Bruxelles