CURRICULUM VITAE OF LICIA VERDE

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1. CAREER

Academic Positions

September 2007 – present: **ICREA professor**[1]

September 2013 – September 2016: **Professor II** [2], Institute of theoretical astrophysics, University of Oslo, Oslo, Norway

July 2003– August 2007: **Faculty**, Dept. of Physics and Astronomy, University of Pennsylvania , PA, USA

July 2002–June 2003: **Chandra Fellow** and **Spitzer Fellow**, Dept. of Astrophysical Sciences, Princeton University, Princeton, NJ, USA.

July 2001–June 2002: **Research Associate**, Physics and Astronomy department, Rutgers University, NJ, USA.

September 2000 – June 2001: **Research Associate**, Dept. of Astrophysical Sciences, Princeton University, Princeton, NJ, USA

Other academic positions (past 10 years)

Scientific Director of "Journal of Cosmology and Astroparticle Physics" (JCAP), since June 2020

Imperial College London Visiting professor (2017–present)

Harvard University Edward, Frances, and Shirley B. Daniels Fellow, Radcliffe Institute for Advanced Study, USA, Sept 2015–May 2016

Harvard University ITC, Harvard Smithsonian Center for Astrophysics, USA, Sep. 2015–May 2016

Imperial College London Center for Inference and Cosmology, UK, Visitor, July-August 2015.

Imperial College London Center for Inference and Cosmology, UK, Visitor, August 2014.

CERN Theory division, Associate, CH, (Sabbatical year) Sep 2012-July 2013.

IPMU Institute of Physics and Mathematics of the Universe, Kashiwanoha, Japan, Visitor, 8-28 March 2010.

CERN Theory division, CH, visitor, 1–30 September 2009

Princeton University, Visiting Senior Research Fellow, Dept. Astrophysical Sciences, Princeton, NJ, USA (Jan 2008, Nov 2008, April 2009)

[1] Institucio' Catalana de Recerca i Estudis Avancats www.icrea.cat, Barcelona (Spain)
[2] Equivalent to adjunct professor

Education

October 1996 – August 2000: **PhD student, Marie Curie Fellow** at the Institute for Astronomy, University of Edinburgh. Edinburgh, UK.

October 1990 – July 1996: **Laurea degree in Physics** [3] Universitá di Padova, Padova, IT

January 1996– June 1996: **Exchange student** at the University of Edinburgh, Edinburgh, UK

October 1994– June 1995: **Exchange student** at the University of Edinburgh, Edinburgh, UK

Degrees

PhD, University of Edinburgh. Thesis entitled "Ω, Bias and Primordial Non-Gaussianity", supervisor: *Prof. Alan F. Heavens* (February 2001)

Laurea degree (equivalent to BSC+MSC) in Physics, University of Padova. Thesis entitled "Large–scale bias in the Universe". Supervisors *Prof. Sabino Matarrese, Prof. Alan Heavens.* Graded 110/110 cum laude (July 1996)

"Maturità classica", Liceo Classico Marco Polo, Venice, IT (July 1990)

Languages

Italian (mother tongue), English (fluent), Spanish (fluent), French (basic)

Honors and Awards

2021 Premio Rey Jaime I de investigacion Basica

2019 Lodewijk Woltjer Lecture by the European Astronomical Society, honours astronomers of outstanding scientific distinction.

2018 Premi Nacionals de Recerca; awarded by the Generalitat and Catalan Foundation for Research and Innovation, recognizes the researcher who has recently contributed significantly internationally to the advancement of a scientific discipline in any of its fields: human and social sciences, life sciences and health, engineering and technology and experimental sciences.

2018 Breakthrough Prize in Fundamental Physics with the WMAP team

2017 Narcis Monturiol Medal "to honour individuals and organisations that made outstanding contributions to scientific and technological development in Catalunya".

2016 ERC Consolidator grant

2015 Thompson Reuters ISI Highly cited researcher –*The top 1% most cited researchers in the field*

2015 Radcliffe Institute of advanced study fellowship Edward, Frances, and Shirley B. Daniels Fellow.

2015 Elected to Young Academy of Europe (2015–present)

2012 Gruber Cosmology prize

2012 Rosenblum lecture,"*Connecting Cosmology to fundamental physics: examples*", Hebrew University

2010 Svein Rosseland lecture, "*Big questions about the Universe*", Oslo University

2009 ERC starting grant

2007 NASA group achievement award for the results of the WMAP mission

2004 Niels Bohr lecture "*Cosmology from the Cosmic microwave background and galaxy surveys*", Niels Bohr institute, Copenhagen

[3] Now equivalent to BSC +Master

2004 NASA group achievement award for the results of the WMAP mission

2002 Chandra Fellowship

2002 Spitzer fellowship

1997 Amelia Earhart Fellowship of Zonta International foundation

1997 Prize "Premio STET Guglielmo Reis Romoli" from *Gruppo STET*

1997 Foundation Blanceflor-Boncompagni Ludovisi nee' Bildt Award

1996 Dewar & Ritchie Studentship from the University of Edinburgh

1995 Performance prize for Erasmus students from Aldo Gini Foundation

Grants (past 10 years only)

Plan Nacional grant (2019–2022) 228,448 EUR PI

CoI and "guarantor" of the Maria de Maeztu distinction awarded to the Instituto de Ciencias de Cosmos (2020-2024) 2M Euros

BePreSysE, European Research Council (ERC Consolidator grant), 2017-2022, PI. (1.83M Euros)

Two Marie Curie fellowships (2015 call, researchers started in 2016-2017) Advisor of researcher.

Beatriu de Pinos fellowship (2015-2017) Advisor of researcher.

CoI and "guarantor" of the Maria de Maeztu distinction awarded to the Instituto de Ciencias de Cosmos (2015-2019) 2M Euros

Plan nacional grant (2015–2019) 227,480 EUR, PI, + one PhD student grant.

Royal Society International Exchange, "Cosmology through CMB, Lensing And Surveys: Statistics, Inflation and Clustering", Overseas PI, 12,000 GBP (Aug 2014- Aug 2016)

University of Barcelona grant to participate in the Horizon 2020 call, PI, 3,000 Euros (2014)

Salvador de Madariaga mobility grant (2013)

PhysCos, PI, AGAUR (2014–2016), 15,000 Euros.

COM SOM (Cosmology and the Origin of Matter, Sabor y Origen de la Materia), Plan nacional 2011-2014, PI 150,000 Euros

University of Barcelona grant for internationalisation of University research, 2010, PI. 4,000 Euros

Phys.LSS, European Research Council (ERC Starting grant), 2009-2016, PI. (1.4M Euros)

Accion Complementaria Plan Nacional Maximizing the scientific return of future galaxy redshift surveys, 2009–2012, PI, 42,000 Euros.

Computational and Observational Resources

Supercomputing allocations at NCSA 2005-2008 30,000 SU, renewed twice. Bought my own dedicated computing cluster in 2010 renewed it in 2017.

Keck telescope, CoI "Cosmic clocks" project, 2 nights in 2006, 2 nights in 2007, 4 nights in 2008

Professional development

"Science and Technology Diplomacy" 3 weeks Summer school, IBEI, Barcelona, July 2021

MOOC: HarvardX, "Exercising Leadership; Foundational principles" by Ronald Heifetz (Apr 2021)

MOOC: edEX, Catalyst, "Communication skills for Bridging Divides" (ongoing)

MOOC: coursera University of Michigan "Successful negotiation: essential strategies and skills" by George Siedel, March 2020

MOOC: Linkedin, Fred Kofman on "Managing conflict", Jan 2020

MOOC: edEX, Catalyst, "Leading With Effective Communication" (Inclusive Leadership Training) Jan 2020

MOOC: edEX, Catalyst, "Unconscious Bias: From Awareness to Action" (Inclusive Leadership Training) Aug 2018

2. RESEARCH INTERESTS

The subjects I have been working on are:
Cosmology; statistics of the large-scale structure of the Universe and cosmic microwave background (CMB) fluctuations; statistical analysis of large-scale structure and galaxy surveys; use of higher order correlations in cosmology and their applications to galaxy redshift surveys; relationship between the clustering properties of visible matter and of the dark matter; nature of the primordial fluctuations: the initial conditions for cosmological structure formation; dark energy; neutrino properties from cosmology; problems for the ΛCDM paradigm; the H_0 tension; robust analysis and interpretation of forthcoming surveys.
Major projects I have been involved with are (in chronological order):

- I have measured the relationship between the clustering properties of visible matter and of the dark matter from the 2dFGRS catalog. This work became one of the Two-degree-Field Galaxy Redshift Survey team papers. This measurement is particularly important in cosmology as the theory predicts the clustering properties of the dark matter but we mostly trace the large-scale structure via the clustering of visible matter. This measurement led to a determination of the density parameter of the Universe independent from the CMB.
- Between 2002 and 2006 I have been a member of the Wilkinson Microwave Anisotropy Probe (WMAP) science team and I have been directly involved in the analysis, interpretation and the release of the observations of the WMAP satellite. Two articles that reported the WMAP results in 2003 have been the first and second most cited papers in astronomy in 2003 and 2004 and the second and the third most cited papers in physics and in astronomy in the year 2003, 2004 and 2005, surpassed only by "Review of particle physics. Particle data group". (source SLAC SPIRES). WMAP results were awarded the 2021 Gruber cosmology prize and the 2018 Breakthrough prize in fundamental physics.
- I have been a member of the Atacama Cosmology Telescope (ACT) science team (first light June 2007) until 2010.
- Between 2004 and 2007 I have been member of the team of a proposed NASA space mission as part of JDEM (Joint Dark Energy Mission): Advanced Dark Energy Physics Telescope (ADEPT).
- Membership of SDSS III and BOSS collaboration. (www.sdss3.org), I have been leading the first measurement and interpretation of the higher order statistics of BOSS galaxies (July 2014).
- Membership of EUCLID.
- I have been part of the steering committee and science working group of COrE+ (Cosmic Origins Explorer) a proposed European space mission for CMB polarimetry measurements
- Membership of DESI (Dark energy spectroscopic instrument) since 2016
- Neutrino properties from cosmology

3. INVITED TALKS & SEMINARS, COLLOQUIA & LECTURES

Invited talks and seminars (past 5 years)

"Open science: an astrophysicist perspective" Lectio Magistralis, Opening of the academic year at SISSA, Trieste (IT), Nov. 2022

"How many h are there? and what do they mean?" invited talk at "Tensions in Cosmology", Corfu, September 2022

"Neutrino properties from Cosmology" Plenary talk PASCOS 2022, Heidelberg, July 2022.

"Precision cosmology, when the party is over" invited plenary talk, RSEF Bienal de la Fisica 2022, Murcia, July 2022

"Cosmic speedometers and how to read them" King's college, June 2022; Colloquium ICCUB, November 2022.

"Model-agnostic analysis of large-scale structure and implications for cosmology" University of Zurich, March 2022.

Debate panelist on: "What would it take for the community to accept the findings?" conference: Debating the potential of machine learning in cosmological surveys, IAP, Paris, October 2021.

"What's new in cosmology?" TAUP21, 17th International Conference on Topics in Astroparticle and Underground Physics, plenary (virtual) Sept 2021

"Hubble troubles"

- Invited colloquium, Institute for Fundamental Physics of the Universe , Trieste, IT, Nov. 2022
- Invited, IAA Severo Ochoa Meeting: Addressing Key Astrophysical Questions from Granada, Oct.. 2022
- Invited plenary, EREP, Salamanca, ES, Sept. 2022
- Colloquium at Institute for Fundamental Physics of the Universe, Trieste, IT, November 2022
- MIAPP workshop on Hubble tension, (virtual) Oct. 2021
- Plenary and panel discussion Sixteenth Marcel Grossmann Meeting on General Relativity (MG16) (virtual) July 2021

"Hubble tensions" Conference: Cosmological Frontiers of Fundamental Physics 2021(Virtual), APC Institute, FR, May 2021.

" Precision Cosmology... Now what? "

- Colloquium, St. Andrews University, Physics and Astronomy department, Jan 2022 (Virtual)
- IAA Colloquium, Sept. 2021 (virtual)
- Joint Geneva area–EPFL Colloquium (Virtual), May 2021

"The unreasonable effectiveness of the ΛCDM"

- Lustrum Symposium (Virtual), NL, May 2021
- Colloquium, IFIC Valencia, Nov 2021
- Colloquium QUID ULTRA, Rome, Dec 2021

"Hubble tensions" Weizmann Institute (Virtual) May 2021.

"Focus on the Hubble tension" GGI tea time, Licia Verde & Adam Riess, (Virtual) March 2021.

"Precision cosmology and blind watchers of the sky"

- Penn State University, fundamental physics seminars, (Virtual) Nov, 2020
- Universita di Padova, IT, (Virtual) Dec, 2020
- ICTP-SAIFR Latin American Workshop on Observational Cosmology (Virtual) Dec, 2020

Panel discussion *Assessing uncertainties in the Hubble's constant across the Universe*, H_0 2020, ESO (Virtual), July 2020

Panel discussion on *"Politica Cientifica"* Sociedad Espanola de Astronomia, plenary virtual meeting, July 2020

"Redshift space Bispectrum: the importance of being anisotropic" Harvard University May 2020 (Virtual)

"Beyond precision cosmology" master Lecture at Santander Universidad de Cantabria Feb 2020; COST action Granada March 2020.

"The H_0 game: an end to end test of our model"

- Panel discussion at "Cosmic Controversies" Chicago Oct 2019
- CoSyne (cosmological synergies in the upcoming decade) Keynote speaker Paris, Dec 2019

"Cosmic clocks", in "Tensions between the Early and the Late Universe" workshop, KITP, Santa Barbara, July 2019

"Post precision Cosmology", Plenary talk at GR22, Valencia, July 2019

"What could be the next surprise in Cosmology?"

- CERN Theory Division Colloquium May 2019
- Physics Department Colloquium Padova University, June 2019

"Post precision Cosmology", Aachen University Physics department Colloquium, May 2019

"Primordial Black holes: the cosmology connection", Solvay conference on the dark side of Black holes, Solvay, April 2019

"Knocking' on Heavens' door" Festschrift in honour of Alan Heavens, Royal Astronomical Society, London, March 2019

"Model-independent Cosmology(?)", Colloquium at Oskar Klein Centre, Albanova University, Stockholm, Feb 2019

"Model-independent Cosmology: why bother? and at what price?" at "Cross disciplinary perspectives on model-independent searches" Edinburgh University and Higgs Centre for Theoretical Physics, Feb 2019

"The importance of bias" Colloquium at LAM Marseille, Jan 2019

"What will be the next surprise in cosmology?" Colloquium at Amsterdam University, Jan 2019

"What will be the next surprise in cosmology? Some guesses" Colloquium at IAP Paris, Nov 2018

"Challenges of particle physics: the cosmology connection", DESY Theory Workshop, DESY, Nov 2018.

"Cosmology: Snakes and ladders"

- DESI Collaboration meeting, Oct 2018
- Institute Henry Poincare, "Analytics, Inference, and Computation in Cosmology", Nov 2018

"The Hubble constant measurement and its impact on Cosmology" invited talk at MIAPP workshop "The Extragalactic Scale in the era of Gaia", Garching, DE June 2018 .

"Neutrinos and cosmological observations" Colloquium, University of Oxford, Physics Department, UK, April 2018

"Unconscious bias in cosmology" Colloquium, MIT Physics department, USA, March 2018

"Beyond precision Cosmology and the trouble with H_0" Colloquium, MPIKP, Heidelberg, DE, Oct 2017

"What does Bayes has to say about neutrino hierarchy and tensions in cosmology?" at Bayes forum, Max Planck Institute for Astrophysics, Garching (Germany), Sep. 2017

"Neutrino properties from cosmology" Plenary talk at Cosmo17, Paris, August 2017

"Fine tuning and betting odds in the dark sector: from the cosmological constant to neutrinos". Invited talk at "the Physics of Fine Tuning", Crete, June 2017

"Concordance Cosmology turns 18" Invited talk at Gordon Research Conference in "String theory and Cosmology", Lucca, IT, May 2017

"Neutrino properties from Cosmology" Invited talk at "Origins of Mass 2017" Odense, Denmark May 2017

"Beyond precision cosmology: some examples", seminar at Yale University, Feb 2017

"Precision cosmology and beyond"

- New Directions in Theoretical Physics, Higgs Centre for Theoretical Physics, Edinburgh UK, Jan 2017
- Colloquium ICC, Barcelona, Nov 2016
- Neils Bohr International Academy seminar, Copenhagen, Nov 2016

"Precision cosmology, what next?" Simons Center for Computational Astrophysics, Oct 2016, New York (USA)

"Robust constraints on neutrino properties from galaxy surveys"

- Dartmouth College, March 2016
- Case Western Research University, March 2016
- Princeton University, Nov 2015

Invited lectures

"*Neutrinos in Cosmology*" 2 lectures, Erice summer school June 2022.

"*Cosmostatistics*" at First CosmoStatistics Mexican School, 8 lectures with hands-on exercises, Guanajuato MX, April 2016.

"*Statistics* " at School on cosmology tools, IFT, Madrid, Nov 2013

"*Neutrinos in Cosmology*" 3 lectures, ISAPP summer school July 2013.

"*Cosmology*" 6 lectures, ISAPP summer school July 2013.

"*Introduction to Cosmology*" 3 Lectures CERN Student Summer Program, CERN, Geneva (CH) August 2013

"*Neutrinos and non-gaussianity*", Euclid school for Engineers, Sept 2012, IAP, Paris (FR).

4 invited lectures "*Introduction to Cosmology*" CERN Student Summer Program, CERN, Geneva (CH) August 2012

3 invited "*Statistical Tools for CMB*", ISAPP graduate school "Cosmic Microwave Background and High Energy Physics", July 2012.

5 invited lectures "*Introduction to Cosmology*" CERN Student Summer Program, CERN, Geneva (CH) August 2011

2 invited lectures:"*Introduction to cosmology*", CERN Latin-American School of High-Energy Physics. March 2011.

3 invited lectures: "*Statistical and numerical tools in Cosmology*", School Essential cosmology for the next generation, Jan 2011

3 lectures: "*Introduction to Cosmology*", TAE Barcelona, September 2010.

5 invited lectures "*Introduction to Cosmology*" CERN Student Summer Program, CERN, Geneva (CH) July 2010

5 invited lectures "*Introduction to Cosmology*" CERN Student Summer Program, CERN, Geneva (CH) July 2009

5 Invited lectures on "*Statistical tools for Cosmology*", 2nd TRR33 Winter School on Cosmology: Theory for Observers; Observations for Theorists, December 2008.

Two lectures on "*Tools to analyze large scale structure surveys*", PAU academic Training, Madrid (December 2007)

4 invited lectures on "*Statistical methods for CMB analysis"*, "XIX Canary island Winter School In Astrophysics: The Cosmic Microwave Background: from quantum fluctuations to the present Universe", November 2007, IAC Canary Islands, Spain.

3 lectures on "*Large-Scale Structure*" for graduate students, at "*PIRE school in cosmology*" at Universidad Catolica de Chile (March 2007).

4 lectures "*Observing dark energy*", at Advanced School "The Dark side of the Universe" Como, IT (May 2007)

Non-technical presentations (In English, Spanish and Italian)

"Los retos de la igualdad" Round table discussion, La Vanguardia talks, Barcelona, March 2022

"VI Coloquio; Mujer Ciencia y Empresa" Round table discussion, Marina de Empresas, Valencia, March 2022

"Observando la luz del Universo mas lejano" Valencia, Ciutat de les artes i les Ciencias, March 2022

"Preguntale a una cientifica" (middle and high school students) Valencia, Ciutat de les artes i les Ciencias, March 2022

"arXiv" Conference of italian Universities Rectors, Jan 2022 (Virtual)

"Dark matter" Round table (virtual) G. Mamon, L. Verde, and C. Frenk; Chaos, University of Bristol, March 2021.

"Observing the light of the distant Universe" (virtual) Cambridge University Scientific society, March 2021.

"Understanding the Universe" Women in aereospace association Barcelona Chapter, Feb 2021

"BigBang: el inicio de todo? " Live talks Cosmocaixa (virtual) Nov 2020.

"Observando la luz del Universo mas lejano" March 2020, Parque de las Ciencias, Granada

"Premio nobel de la fisica 2019 a Jim Peebles" as part of Dark matter day, UB Oct 2019.

"Osservando la luce dell'universo piú lontano", in "Svelare l'universo" Centro culturale San Gaetano, Padova, Oct. 2019

"Una tarde en el lado oscuro del Universo" Cosmocaixa, Barcelona, June 2019, a conversation with Rocky Kolb.

"Observando la luz del Universo mas lejano" Cosmocaixa, Barcelona, April, 2018.

"Comprender el Universo" "sopar amb Estrellas", Semana de la ciencia, Gava, Nov 2017

"Comprender el Universo" series "Dia de la Ciència a les Escoles", public: 16-17 years old, Nov 2016, Sant Vicenc dels Horts.

"Cosmology and Science diplomacy" in ERCEA (European Research Council Executive Agency) Conference "Frontier Research and Science Diplomacy", public: politicians, policy makers, Oct 2016, Brussels.

"Probing the large-scale Universe" hour-long interview for public television WGBH Forum Network, Boston, Jan. 2016.

"Where does the Sun go at night?" and *"The solar system"* 3-4 years old and 4-5 years old preschoolers, British School of Barcelona, June 2015

"El lado oscuro del Universo" Comision d'egualdad UB, UB, April 2015

"Cosmologia: observando el invisible", Asociacion Astronomos Aficionados ASTER, Barcelona, April 2015

"El lado oscuro de universo", series "La ciencia en primera persona", en el "Dia de la Ciencia a les Escoles", public 4to de ESO 19 Nov 2014, Sant Boi de Llobergat.

"Observando los tremblores del big bang" Planetario de Madrid, 13 Nov 2014 (https://vimeo.com/112259646).

"Diez preguntas sobre el Universe, un concurso para todos los públicos" Teruel, Sept 2014.

"Que es y donde esta el 96% del Universo?" Agrupació Astronòmica de Sabadell , March 2014

"Que es y donde esta el 96% del Universo?" Pessics de Ciencia, series, Ajuntament de L'Hospitalet, October 2013

"Euclid and neutrinos" Euclid Hangout, June 2013

Two lectures on *Cosmology* CERN open days, September 2013.

"Origins" 2013, September 2013, CERN

"Black Holes", International English College, Malaga (ES), May 2010.

"L'Universo" , Scuola Elementare Italiana di Barcellona (8-9 years old), April 2010

"Big Questions about the Universe", ICREA colloquium, Barcelona, Oct 2009

"El lado oscuro del Universo", ciclo "Humanidades, Ingenieria y Arquitectura", UPM, Madrid (ES), May 20, 2009

"The dark side of the universe", International English College, Malaga (ES) -High school level-, March 2009.

"The dark side of the universe", SETroutes Insight lecture (www.set-routes.org) Nov 2008, CERN, Geneva (CH)

"A crisis in Cosmology?", EuroScience Open Forum - ESOF 2008 Barcelona (ES), July 2008

"How can the CMB help constraining dark energy?","A Decade of Dark Energy Science Writer's Workshop", May 2008, Space Telescope Science Institute, Baltimore, MD, USA

"La energia Oscura", "XI ciclo de conferencias presente y futuro del a ciencia y la tecnologia", Malaga (ES), April 2008

"*Dark energy*", March 2008, Oporto (PT).

"*Seeing dark energy with the cosmic microwave background and galaxy surveys*" Dark energy session at 2005 AAAS, Washington, DC, USA.

Two talks at Euroscience Open Forum, "*The cosmic connection*" and "*The top 10 mysteries of the Universe*", Stockholm, August 2004

"*Combining Cosmic Microwave Background observations and Galaxy Surveys*", Cool astronomy for everyone session at AAS, Nashville, May 2003

Science and art
"Explorando la musica del Cosmo": introducing the concert of DeProducers, Auditorium, Barcelona, June 2021
Contribution to "Searching the unknown: the Dark Matter Collection" by Enrico Magnani, 2019
Spectral Exchange (dialog with visual artists and writers) San Sebastian Nov 2018
https://www.tabakalera.eu/en/spectral-exchange

Inspirational talks

British School of Barcelona, opening of STEM center, Barcelona, April 2022

Zonta International, Alumnae Network meeting, Nice, FR, June 2016 on gender equality in STEM

English International College (Malaga, ES), June 2015, closing of the academic year 2015 and graduation

4. TEACHING, TRAINING and MENTORING EXPERIENCE

Formal courses

Cosmology Course (advanced undergraduate) at the University of Oslo spring 2014, 2015, 2016.
I do give specialised lectures at summer or winter schools. You can find some examples of some of my lectures recorded on line:
http://videolectures.net/licia_verde/ (summer course introduction to cosmology final year undergraduate/first year graduate level)
http://cds.cern.ch/record/1142569?ln=de (Outreach/high school level)
http://freevideolectures.com/Course/3224/Essential-Cosmology-for-the-Next-Generation/5 (statistics, graduate student -not in statistics- level)

Other

Graduate visiting student supervisor D. Karagiannis (May—June 2015)

Undergraduate visiting student supervisor for senior thesis (Stefania Pandolfi) (Feb 2008–April 2008)

Students and Postdocs

Supervisor of undergraduate student Irene Abril. Summer 2021 $\longrightarrow$ Master student then PhD student, Cambridge, UK.

Master students

Co-supervisor (with Hector Gil-Marin) of Master student of Adriana Nadal (2022–)

Co-supervisor (with Nils Shoneberg) of Master student of Marina Augustin (2022–)

Supervisor of Master student Sergi Novell (2020-2021) $\longrightarrow$ PhD student at UB

Co-Supervisor of Master student Lorenzo Piga (May 2019-June 2019) from Univ. Rome (IT) $\longrightarrow$ PhD student at Parma Univ.

Co-Supervisor of Master student Alba Kalaja (Feb 2019-April 2019) from Univ. Padova (IT) $\longrightarrow$ PhD student at Groningen

Co-Supervisor of Master (Erasmus + student) Giulio Scelfo (March 2018-June2018) from Univ. Padova (IT) $\longrightarrow$ PhD student at SISSA Trieste (IT)

Supervisor of Master student Jose-Luis Bernal Mera (2014–2015) $\longrightarrow$ FPU PhD student at UB. Now Ramon y Cajal Fellow at University of Cantabria.

Co-Supervisor of master student Andrea Ravenni (2015) from Univ. Padova (IT) $\longrightarrow$ PhD student at Padova University.

Tutor of Master student Francesca Frangoude (Jan 2011–Sept 2011) $\longrightarrow$ PhD student at Laboratoire d'Astrophysique de Marseille. Now faculty a Durham.

PhD students

PhD Advisor of Emanuele Fondi, la Caixa Inphinit (Oct 2021–present)

PhD Co-Advisor (with Hector Gil-Marin) of Sergi Novell (Oct 2021–present)

PhD Co-Advisor (with Hector Gil-Marin) of Samuel Brieden (Oct 2018 –Sep. 2022) ⟶ Postdoctoral Fellow at Edinburgh University

PhD Co-Advisor Ali Rida Khalife, (May 2017–2022) ⟶ Postdoc IAP Paris.

PhD advisor of Kathleen Short, La Caixa PhD fellowship (2017–2022)

PhD advisor of David Valcin (May 2017–Dec 2020) ⟶ Postdoctoral Fellow at Ohio, University

PhD advisor of Nicola Bellomo (Jan 2016–Jan 2020) ⟶ Postdoctoral Fellow at UT (Austin TX USA)

PhD advisor of Jose-Luis Bernal Mera (Sep. 2015–Sep 2019) ⟶ Postdoctoral Fellow at JHU (USA), now Ramon y Cajal Fellow at University of Cantabria

PhD advisor of Hector Gil-Marin (Nov 2008–Sept. 2012) ⟶ postdoc at Institute of Cosmology and Gravitation Portsmouth (UK).

PhD advisor of Anna Mangilli (Nov 2007–Sept 2011) ⟶ Planck postdoc at IAP Paris.

Advisor of graduate student Carolyn Sealfon (July 2003–June 2006) ⟶ lectureship at West Chester University (USA).

Postdocs

Postdoctoral advisor of Ben Giblin (From May 2022)

Postdoctoral advisor of Nils Shoneberg (From Oct 2021)

Postdoctoral advisor of Davide Gualdi (May 2019– Sep. 2022) ⟶ Senior data scientist at Boston Consulting Group.

Postdoctoral advisor of Davide Bianchi (Oct 2018–Oct 2021) ⟶ long term Fellow University of Milan (IT)

Advisor of Hector Gil Marin, La Caixa Fellowship Junior Leader (Oct 2018–2022). Now Ramon y Cajal Fellow UB

Postdoctoral advisor of Ilia Musco (March 2018– September 2019) ⟶ Postdoc Geneva University

Co-Postdoctoral advisor of Ricardo Ferreira (2016–2018) ⟶ Nordita Fellow Stockholm.

Postdoctoral advisor of Ben Kalus (Sep. 2017–Sept 2020) ⟶ postdoctoral Fellowship KASI

Postdoctoral advisor of Alexander Mead (Sep. 2017–Oct 2020) Marie Curie Fellow ⟶ Edinburgh University.

Postdoctoral advisor of Alvise Raccanelli (Sept. 2016–Sept 2018) Marie Curie Fellow ⟶ CERN theory Fellowship, from 2020 Faculty Padova Univ.

Postdoctoral advisor of Bin Hu (Dec 2015–Dec 2016) ⟶ Faculty Thousand talents program, CN

Postdoctoral advisor of Emilio Bellini (June 2014–Sept, 2016)⟶ Beecroft Fellow, Oxford.

Postdoctoral advisor of Antonio Cuesta (Oct 2013–Jan 2017) ⟶ University of Granada (Now faculty at University of Cordoba)

Postdoctoral advisor of Fergus Simpson (Jan 2014–March 2017) ⟶ Startup α-I

Postdoctoral advisor of Jorge Norena (Oct 2010–Oct 2013) ⟶ postdoc at University of Geneva, CH, now Faculty, Chile.

Postdoctoral advisor of Christian Wagner (Oct 2009–Sept. 2012) ⟶ postdoc at MPA, Munich

Postdoctoral advisor of Ben Hoyle (Nov 2009–Sept. 2012) ⟶ postdoc at Excellence Cluster, Munich.

Postdoctoral advisor of Aday Robaina (August 2010–July 2012) ⟶ postdoc at Univ. Michigan USA. Now analyst (Madrid).

Postdoctoral advisor of Roland de Putter (Oct 2010 – Sept. 2012) ⟶ Caltech Postdoctoral Scholar at Jet Propulsion Laboratory

Postdoctoral advisor of Beth Reid (Nov 2008–August 2010) ⟶ Hubble Fellow at Berkeley (USA)

Postdoctoral advisor of Anastasios Avgoustidis (Dec 2008–Oct.2009). Dr. Avgoustidis is now faculty at Nottingham University (UK).

Postdoctoral advisor of Carmelita Carbone (May 2008–May 2009). Dr. Carbone is now faculty at Milan Observatory (IT).

Postdoctoral advisor of Carlos Hernadez-Monteagudo (Feb 2005 — September 2007). Dr. Hernandez-Monteagudo is now staff at IAC.

Postdoctoral advisor of Viviana Acquaviva (Nov 2006 — August 2007). Dr. Acquaviva is now a Faculty at CUNY New York (USA).

Mentoring

-Mentor in 1000Girls1000Talents program of the New York Academy of Science to increase worldwide the participation of women in STEM-careers. (2015–2017)

-Advisor for other Mentors of the 1000Girls1000Talents program of the New York Academy of Science to increase worldwide the participation of women in STEM-careers (2016–2017)

-Mentor: Asociacion Mujeres Investigadoras & tecnologas, 2021

-Mentor within DESI collaboration 2022

5. SERVICE and Conference organization

Committees (Advisory, Selection, Thesis- past 10 years)

ArXiv Science Advisory Board Chair (Jan 2019-Dec 2021)

ArXiv science advisory board (Dec 2015– present). As part of my Science Advisory Board position I have participated in: Search committee of the next Executive director, sub group on arXiv Strategic Planning, sub group on Scholarly communication ecology including open access mandates, technical evaluation for a dark archive for arXiv, arXiv code of conduct, arXiv mission vision and values document, development of arXivLabs.

Consejo Científico Asesor de la Fundación GADEA por la Ciencia (from 2022)

Scientific Advisory Panel at Institute of Physics, University of Amsterdam (2022)

SciTalks scientific advisory board (from Dec 2020)

Max Planck Institute for Astrophysics (Garching) Scientific International Advisory Committee "Fachbeirat" (2015–present), Chair in 2022.

ICS Zurich external advisory vistiting committee (2021)

International Advisory committee, Oskar Klein Center (Stockholm) 2021

DESI external collaborators committee (2019–2020)

DESI publication committee (2016–2021) Chair 2019-2021: to ensure the scientific quality of DESI publications and satisfy the data management plan requirements.

Lisa Meitzer Selection panel (2021).

"conseill assesor" to increase UB success in ERC grant applications via internal selection and mentoring program and mock panel for interviews (2019–present)

Euclid speakers bureau (2019–present): to ensure fair representation in Euclid talks and that talk content complies with Euclid requirements.

EuCAPT steering committee (2019–2022, also working on governance and code of conduct), European Consortium for Astro Particle Theory; eucapt.org

Mentorship program AMIT (Spanish association of women in research and technology): mentor.

Selection committee for faculty position, Ecole Normale Superieure, Paris, 2017

International Astrostatstics association council member (2016–2017)

Selection committee for faculty position, Stockholm University, 2017

Panel for the evaluation of the International Max Planck Research Schools (IMPRS) Heidelberg DE (2015)

Steering committee of COrE/PRISM-ESA next generation CMB polarization mission (2014–2017)

Visiting committee Institut d'Astrophysique de Paris (IAP), Paris, AERES expert (2013)

Institute Lagrange Paris, Scientific committee (2011–2015)

PhD thesis committees:
M. Francis (Rutgers University); R. Kristiansen (Oslo University); G. Dobler (UPenn); F. Stabenau (UPenn); Z. Wahhaj (UPenn); D. Dolney (UPenn), J. Grande (UB), Johan Samsings (Dark, Copenhagen), Zachary Sleepian (Harvard University), A. Escriba (UB), M. Millon (EPFL), Guillermo Abellan (Montpellier).

Editorial board

Scientific Director of "Journal of Cosmology and Astroparticle Physics" (JCAP), since June 2020
Editor for "Journal of Cosmology and Astroparticle Physics" (JCAP), since 2017
Editorial Advisory Panel for "Classic and Quantum Gravity" (CQG), 2016-2019
Editor for "Physics of the dark universe" journal, Elsevier, 2013–2018.

Astronomical service

Referee

Referee for ApJ, MNRAS, PRD, PRL, PRD, Nature, A&A, CQG, JCAP

Referee for Italian Evaluation of Research Quality (2012, 2013)

Reviewer (selected)

ERC advanced grants, PE9 panel 2019, 2021.

Panel. BIST Ignite Phase 2 selection, Nov 2021

Panel NASA ADAP dual blind review panel, Nov 2020

Panel Radcliffe fellows 2021-2022 and 2022-2023 program.

Panel for MSCA H2020 and co-FUND programs 2018–2019

Ramon y Cajal positions selection committee 2019

Chair of the NASA Hubble Fellowship Physics & Cosmology selection panel, NASA, Jan 2018

NSERC (Natural Sciences and Engineering Research Council of Canada) grant reviewer (2018)

Barcelona Institute for Science and Technology grants reviewer (2017, 2018, 2020)

2018, 2019 DiRAC allocation reviewer

Marie Curie Fellowship expert reviewer 2018

co-FUND Fellowship expert reviewer 2018

Radcliffe Fellowship selection committee (2016, 2017, 2018, 2019) –Harvard University–

Grant reviewer for ANPCYT (Argentina National research council, 2017)

Einstein Fellowships Allocation committee (2015) –NASA–

Grant reviewer (Physics section) for Ministerio de Economia y Competitividad (ES) Plan Nacional grants – akin to UK rolling grants– (2015)

Grant allocation committee (Astro section), for Ministerio de Economia y Competitividad (ES) Plan Nacional grants – akin to UK rolling grants– (2015)

Grant reviewer for Swiss National Science foundation (2015, 2017, 2018, 2019)

Grant reviewer for CONICYT (Chilean national research council) (2015, 2016)

Grant reviewer for NWO (Dutch national research funding) (2014).

Grant reviewer for SRNSF (Georgia National Research funding) (2013)

Grant reviewer for French Agencie Nationale de Recherche (2013, 2016).

ERC (European Research Council) referee and "expert" (2012–Present)

Grant Reviewer for German Research Foundation DFG (2011, 2012, 2013)

Reviewer for STFC- Science and Technology Funding Council- (UK, 2010, 2011, 2019)

Grant reviewer for Ministerio de ciencia y Innovacion Plan Nacional grants – akin to UK rolling grants– (2012, 2015, 2017)

Grant reviewer for Ministerio de ciencia y Innovacion (ES) Ramon Y Cajal positions (2011)

Reviewer for Los Alamos National Lab collaborative research grants (2008)

Fellowships allocation committee: Chandra (2008) and Einstein (2009) fellowships, NASA

Grant allocation committee: NASA Astrophysics Theory program (2003, 2006)

Review committee: NASA postdoctoral applications (2004, 2006).

Reviewer for Research Corporation Awards–USA (2003)

Prize committees

Committee for Gruber Prize; 2021, 2022

Commitee for Livio Gratton prize 2021, best PhD thesis.

Committee for Premi Nacional de Recerca, Premi Nacional de talent Jove, 2019

Committee for MERAC prize, Tycho Brahe medal, Fritz Zwicky Prize of European Astronomical society, 2019, 2020, 2021, 2022

Allocation committee for John Bahcall Physics Award 2016

Conference organisation (past 5 years)

Scientific Organizing Committee EAS 2022 special session on "Shedding light on the dark side of the universe with new cosmological probes"

Scientific Organizing Committee IAP Machine learning 2021

Scientific Organizing Committee WIN21

Scientific Organizing Committee PhysicsNEXT: The future of scholarly communication (tentative title), American Physical Society, June 2020 (postponed)

Scientific Organizing Committee B-modes from space, MPI, Garching December 2019.

Scientific Organizing Committee for Kavli Institute for Theoretical Physics program "Tensions between the Early and the Late Universe", Santa Barbara, USA, July 2019

Scientific Organizing Committee for Gordon Research Conference "String theory and Cosmology", 2019 Edition.

Scientific Organizing Committee for Cosmo21 2018, Valencia.

Scientific Organizing Committee for Neutrino 2018, Heidelberg 2018

Scientific Organizing Committee for Spanish-Portuguese Relativity Meeting 2018

Scientific Organizing Committee for Cosmo21 2018

Scientific Organizing Committee for Spanish Astronomical society biannual meeting (2017-2018 and 2019-2020)

Scientific Organizing Committee for Neutrino 2016, London July 2016

Scientific Organizing Committee for "fundamental Cosmology" 2013, 2014, 2015, 2016, 2017.

Organising committee (SOC and LOC) "From Inflation to Galaxies" a workshop in honour of Sabino Matarrese, Sept 2015, Castiglioncello LI, IT.

Scientific Organizing Committee for MPA/ESO/MPE/EXC Joint Conference on the large-scale structure, Munich, July 20-24, 2015

Scientific Organizing Committee for the Aspen Winter Conference, Closing in on the cosmological model, March 2015

Chair of the Scientific Organizing Committee for "Beyond LCDM" conference Oslo Jan. 2015.

Other

European Center for Astro-Particle theory (EuCAPT) Steering committee (2019–2022)

Coordinating pilot program in ICCUB to improve institution success with ERC starting grants (2017). Effort continues in 2019 with involvement from the School (Physics and Chemistry).

Consultant for Diversity Climate and Equity committee at ICC

Working group: CMBPol Mission Concept Study, Inflation working group and Fisher working group (preparation for the US National Academies Decadal Survey, 2008)

Writer: LSST Science Book (writer in BAO, Large-scale structure and bispectrum chapters, in preparation for the US National Academies Decadal Survey)

Reviewer for the astronomy textbook "The Cosmic Perspective" Bennett et al. 4th ed. (2005)

Public understanding of science

-"¿Como empezo todo? " podcast ORBITALAIKA for RTVE, 2021
- "Understanding the Universe", webinar Women4Space, Feb 2021
- "Exploring the Hubble tension" Cern Courier Interview article, May 2021
- "Cartografiando el Universo" Hector Gil-Marin and Licia Verde, SAE Bulletin Dec 2021
- "¿Debemos dejar que la inteligencia artificial optimice la sociedad?" the conversation May 2021
- "Que es la energia oscura?" las cientificas responden, El Pais, April 2021.
- "desde cuando existe el espacio tiempo?" las cientificas responden , El Pais, Aug 2020.
- TV3 appearance en "el matí" program, Dec 4th 2019.
- Featured in PBS TV series "Closer to Truth" (In English)
- Inauguration of Science week, Parlament de Catalunya, November 2019 (Spanish)
- Appearance in "Las leyes de la termodinamica" a film by Mateo Gil, in cinemas April 2018 and on Netflix (In Spanish; English with Spanish Subtitles)
- La Vanguardia Sec. Big Vang, "Cual es la teoría más válida sobre el final del Universo?", April 2018 (in Spanish)
-National Geographic Espana, "Carta estrella", "La conquista de Martes", Dec 2016. (In Spanish)
-Fabrica de ciencia Radio Gava, March 2016 (http://us.ivoox.com/es/cosmologia-fondo-microondas-galaxias-otros-aspectos-audios-mp3_rf_10710722_1.html) (In Spanish)
-WHBG Public broadcasting, hour-long documentary, Jan 2016 (http://www.forum-network.org/lectures/probing-large-scale-universe/) (In English)

6. PUBLICATIONS

Total citation count (from ADS): 73,393; h index (from Astrophysics Data System): 84.
Google scholar: citation count: 88350 (37343 since 2017), h index: 90.
$*$ indicates alphabetic authorship,# indicates papers with group's students/postdocs, ** indicates alphabetic authorship after lead author(s)

In refereed journals, published/in press

1. "Unveiling the Universe with emerging cosmological probes"**, Moresco, M., et al. (incl. L. Verde) Living Reviews in Relativity, Volume 25, Issue 1, article id.6, arXiv:2201.07241

2. "The effect of outflows on CMB bounds from Primordial Black Hole accretion" # Piga, Lorenzo; Lucca, Matteo; Bellomo, Nicola; Bosch-Ramon, Valentí; Matarrese, Sabino; Raccanelli, Alvise; Verde, Licia, 2022, JCAP12 016, arXiv:2210.14934

3. "BAO+BBN revisited - growing the Hubble tension with a 0.7 km/s/Mpc constraint" # Schöneberg, Nils; Verde, Licia; Gil-Marín, Héctor; Brieden, Samuel, 2022JCAP...11..039, arXiv:2209.14330

4. "Quijote-PNG: Quasi-maximum Likelihood Estimation of Primordial Non-Gaussianity in the Nonlinear Dark Matter Density Field" Jung, Gabriel; Karagiannis, Dionysios; Liguori, Michele; Baldi, Marco; Coulton, William R.; Jamieson, Drew; Verde, Licia; Villaescusa-Navarro, Francisco; Wandelt, Benjamin D., 2022, ApJ, 940, 71, arXiv:2206.01624

5. "Overview of the Instrumentation for the Dark Energy Spectroscopic Instrument" Abareshi, B.; et al (incl. L. Verde), The Astronomical Journal, Volume 164, Issue 5, id.207, 62 pp., arXiv:2205.10939

6. "Neutrino masses and mass hierarchy: evidence for the normal hierarchy"$*$ Jimenez, Raul; Pena-Garay, Carlos; Short, Kathleen; Simpson, Fergus; Verde, Licia, 2022, JCAP, 09 006, arXiv:2203.14247

7. "Model-agnostic interpretation of 10 billion years of cosmic evolution traced by BOSS and eBOSS data"#, Brieden, Samuel; Gil-Marín, Héctor; Verde, Licia, 2022, JCAP08 024, arXiv:2204.11868

8. "Cosmology Intertwined: A Review of the Particle Physics, Astrophysics, and Cosmology Associated with the Cosmological Tensions and Anomalies"$*$ Abdalla et al (incl. L. Verde) 2022, Journal of High Energy Astrophysics. 34, 49, arXiv:2203.06142

9. "Breaking the single clock symmetry: Measuring single-field inflation non-Gaussian features"∗ Bertacca, Daniele; Jimenez, Raul; Matarrese, Sabino; Verde, Licia, 2022, PRD, 105, vol 4, 043503

10. "PT challenge: Validation of ShapeFit on large-volume, high-resolution mocks"# Brieden, Samuel; Gil-Marín, Héctor; Verde, Licia, 2022, JCAP06 005, arXiv2201.08400

11. "Integrated trispectrum detection from BOSS DR12 NGC CMASS"# Gualdi, Davide; Verde, Licia, 2022, JCAP 09,050, arXiv:2201.06932

12. "Model-independent versus model-dependent interpretation of the SDSS-III BOSS power spectrum: Bridging the divide" Brieden, Samuel; Gil-Marín, Héctor; Verde, Licia, 2022, PRD, vol 104, L121301 arXiv:2106.11931

13. "Shapefit: extracting the power spectrum shape information in galaxy surveys beyond BAP and RSD",# S. Brieden, H. Gil-Marin, L. Verde, 2021, JCAP, 12054, arXiv:2106.07641

14. "The Kaiser-Rocket effect: three decades and counting"# Bahr-Kalus, Benedict; Bertacca, Daniele; Verde, Licia; Heavens, Alan, 2021, JCAP11027, arXiv:2017.00351

15. "Detecting Neutrino Mass by Combining Matter Clustering, Halos, and Voids" Bayer, Adrian E.; Villaescusa-Navarro, Francisco; Massara, Elena; Liu, Jia; Spergel, David N.; Verde, Licia; Wandelt, Benjamin D.; Viel, Matteo; Ho, Shirley, 2021, ApJ, 919, 24 arXiv:2102.05049

16. "Cosmology Intertwined I, II, III, IV" Di Valentino et al., Astroparticle Physics, 2021, Vol 31, 102604, 102605, 102606 and 102607

17. "Joint analysis of anisotropic power spectrum, bispectrum and trispectrum: application to N-body simulations"# D. Gualdi, H. Gil-Marin, L. Verde, 2021, JCAP, 07008, arXiv:2104.03976

18. " The Age of the Universe with Globular Clusters: Reducing Systematic Uncertainties"# D. Valcin, R. Jimenez, L. Verde, j. Bernal, B. Wandelt, 2021, JCAP08(2021)017, arXiv:2102.04486

19. "The trouble beyond H_0 and the new cosmic triangles")# Bernal J.L., **Verde, L.**, Jimenez R., Kamionkowski M., Valcin D.,. Wandelt, B. , PRD, 103, 103533 (2021) editor's pick arXiv:2102.05066

20. "Matter trispectrum: theoretical modelling and comparison to N-body simulations"# Gualdi, Davide; Novell, Sergi; Gil-Marin, Hector; **Verde, Licia**; 2020, JCAP, arXiv:2009.02290

21. "Including beyond-linear halo bias in halo models"# Mead, A., **Verde, L.**, MNRAS 2021, arXiv:201108858

22. "Inferring the Age of the Universe with Globular Clusters"# Valcin, David; Bernal, José Luis; Jimenez, Raul; **Verde, Licia**; Wandelt, Benjamin D.; 2020, JCAP 12, 002, arXiv:2007.06594

23. "Galaxy redshift-space bispectrum: the Importance of Being Anisotropic" # D. Gualdi, **L. Verde**, 2020, JCAP06..041, arXiv:2003.12075

24. "Giants eating giants: Mass loss and giant planets modifying the luminosity of the Tip of the Giant Branch" R. Jimenez, U.G. Jorgensen, **L. Verde**, 2020JCAP...10..027, arXiv:2003.11499

25. "Beware of commonly used approximations. Part II. Estimating systematic biases in the best-fit parameters" # Bernal, José Luis; Bellomo, Nicola; Raccanelli, Alvise; **Verde, Licia**; 2020, 2020JCAP...10..017, arXiv:2005.09666

26. "Beware of commonly used approximations. Part I. Errors in forecasts"# Bellomo, Nicola; Bernal, José Luis; Scelfo, Giulio; Raccanelli, Alvise; **Verde, Licia**; 2020, 2020JCAP...10..016, arXiv:2005.10384

27. "Blind observers of the sky" # Brieden, Samuel; Gil-Marín, Héctor; **Verde, Licia**; Bernal, José Luis; 2020; 2020JCAP...09..052, arXiv:2006.10857

28. "Setting the Stage for Cosmic Chronometers. II. Impact of Stellar Population Synthesis Models Systematics and Full Covariance Matrix" M. Moresco, R. Jimenez, **L. Verde**, A. Cimatti, L. Pozzetti, 2020, 2020ApJ...898...82, arXiv:2003.07362

29. "What Can We Learn by Combining the Skew Spectrum and the Power Spectrum?"# J.P. Dai, **L. Verde**, J.Q. Xia; 2020, 2020JCAP...08..007, arXiv:2002.09904

30. "Enlightening the dark ages with dark matter"# Short, Katie; Bernal, Jose Luis; Raccanelli, Alvise; **Verde, Licia**; Chluba, Jens; 2020; 2020JCAP...07..020S, arXiv191207409

31. "The Quijote simulations" Villaescusa-Navarro, Francisco et al, (incl. **L. Verde**), 2019, 2020ApJS..250....2, arXiv190905273

32. "Confronting missing observations with probability weights: Fourier space and generalized formalism"# Davide Bianchi, **Licia Verde**, 2020, MNRAS, 495, 1511, arXiv:1912.08803

33. "BE-HaPPY: bias emulator for halo power spectrum including massive neutrinos"# Valcin, David; Villaescusa-Navarro, Francisco; **Verde, Licia**; Raccanelli, Alvise; 2019JCAP...12..057, arXiv:1901.06045

34. "From primordial black holes abundance to primordial curvature power spectrum (and back)"#** Kalaja, Alba; Bellomo, Nicola; Bartolo, Nicola; Bertacca, Daniele; Matarrese, Sabino; Musco, Ilia; Raccanelli, Alvise; **Verde, Licia**, 2019, JCAP, 2019JCAP...10..031, arXiv:

35. "Tensions between the early and late Universe" **Verde, Licia**; Treu, Tommaso; Riess, Adam G., 2019, Nature Astronomy, 2019NatAs...3..891

36. "Measuring the Homogeneity of the Universe"# Raul Jimenez, Roy Maartens, Ali Rida Khalife, Robert Caldwell, Alan F. Heavens and **Licia Verde**,2019, JCAP, 2019JCAP...05..048J, arXiv:1902.11298

37. "The local and distant Universe: stellar ages and H_0" Raul Jimenez, Andrea Cimatti, **Licia Verde** et al. 2019, JCAP03043, arXiv:1902.07081

38. "Bayesian emulator optimisation for cosmology: application to the Lyman-alpha forest" Keir Rogers, Hiranya Peiris, Andrew Pontzen, Simeon Bird, **Licia Verde**, Andreu Font-Ribera, JCAP 02,031, 2019, arXiv:1812.04631

39. "An Emulator for the Lyman-alpha Forest" Simeon Bird, Keir Rogers, Hiranya Peiris, **Licia Verde**, Andreu Font-Ribera, Andrew Pontzen, 2019, JCAP 02050, arXiv:1812.04654

40. "Setting the stage for cosmic chronometers I. Minimizing frosting with an optimized selection of cosmic chronometers" Michele Moresco, Raul Jimenez, **Licia Verde**, Lucia Pozzetti, Andrea Cimatti, Annalisa Citro, 2018, ApJ, 868, 84 arXiv:1804.05864

41. "Measuring the Energy Scale of Inflation with Large Scale Structures" #* Nicola Bellomo, Nicola Bartolo, Raul Jimenez, Sabino Matarrese, **Licia Verde**, 2018, JCAP11(2018)043

42. "GWXLSS: Chasing the Progenitors of Merging Binary Black Holes" # Giulio Scelfo, Nicola Bellomo, Alvise Raccanelli, Sabino Matarrese, **Licia Verde**, 2018, JCAP 09, 039, arXiv:1809.03528

43. "Supergravity, α-attractors and primordial non-Gaussianity"* Bartolo, Nicola; Matteo Bianco, Domenico; Jimenez, Raul; Matarrese, Sabino; **Verde, Licia**, 2018, JCAP 10(2018)017, arXiv180504269

44. "A map-based method for eliminating systematic modes from galaxy clustering power spectra with application to BOSS"# Kalus, B.; Percival, W. J.; Bacon, D. J.; Mueller, E.-M.; Samushia, **L.; Verde**, L.; Ross, A. J.; Bernal, J. L., MNRAS, 482, 453, 2019, arXiv:18060.2789

45. "Biases from neutrino bias: to worry or not to worry?"#, Raccanelli, Alvise; **Verde, Licia**; Villaescusa-Navarro, Francisco, MNRAS 483, 734 , 2019, ArXiv:170407837

46. "Signatures of primordial black holes as seeds of supermassive black holes"# José Luis Bernal, Alvise Raccanelli, **Licia Verde**, Joseph Silk, JCAP 1805 (2018) 017, arXiv:1712.01311

47. "Effects of primordial black holes quantum gravity decay on galaxy clustering" #Raccanelli, A., Vidotto, F., **Verde, L.**, JCAP (2018) 1808003 , arXiv:1708.02588

48. "Implications for the missing low-mass galaxies (satellites) problem from cosmic shear" Jimenez, Raul; **Verde, Licia**; Kitching, Thomas D., 2018, MNRASLett, 479L, 86.

49. "Constraining primordial non-Gaussianity with bispectrum and power spectrum from upcoming optical and radio surveys"# Karagiannis, Dionysios; Lazanu, Andrei; Liguori, Michele; Raccanelli, Alvise; Bartolo, Nicola; **Verde, Licia**, 2018, MNRAS, 478, 1341

50. "Dark energy from the motions of neutrinos"# ** Fergus Simpson, Raul Jimenez, Carlos Pena-Garay, **Licia Verde**, PDU 20, 72 2018

51. "Peering beyond the horizon with standard sirens and redshift drift" # Jimenez, Raul; Raccanelli, Alvise; **Verde, Licia**; Matarrese, Sabino, 2018, JCAP 04002, arXiv:1711.07984

52. "Relativistic wide-angle galaxy bispectrum on the light-cone"# Bertacca, Daniele; Raccanelli, Alvise; Bartolo, Nicola; Liguori, Michele; Matarrese, Sabino; Verde, Licia, 2018, PRD 97023531, arXiv:170509306

53. "Exploring Cosmic Origins with CORE: Survey requirements and mission design" Delabrouille et al. (incl.**L. Verde**), 2018, JCAP,04014, arXiv:170604516

54. "Primordial Black Holes as Dark Matter: Converting Constraints from Monochromatic to Extended Mass Distributions "# * Bellomo, N., Bernal J., Raccanelli, A., **Verde, L.**, 2018, JCAP 01004, arXiv:1709.07467

55. "Cosmological implications of Primordial Black Holes"# ** Bernal, J., Bellomo, N., Raccanelli, A., **Verde, L.**, 2017, arXiv:1709.07465, JCAP 10, 052

56. "Neutrinos in cosmology" * Lesgourgues, J., **Verde, L.** in Review of Particle Physics, 2018 edition (updated every year 2019, 2020, 2021, 2022)

57. The clustering of galaxies in the completed SDSS-III Baryon Oscillation Spectroscopic Survey cosmological analysis of the DR12 galaxy sample" * Shadab Alam et al. incl. **L. Verde**, 2017, MNRAS, 470, 2617, arXiv:1607.03155

58. "Cosmic Microwave Background Science at Commercial Airline Altitudes" Feeney, S., Gudmundsson J. E., Peiris, H. V., **Verde**, L., Errard, J., 2017, MNRAS Lett, 469, 6, arXiv:1610.07604

59. "The limits of cosmic shear"** Kitching, T. D., Alsing J., Heavens, A. F., Jimenez R., McEwen, J. D., **Verde, L.**, 2017, MNRAS, 469, 2737, arXiv:1611.04954

60. "Strong Bayesian evidence for the normal neutrino hierarchy" # Simpson, F; Jimenez, R; Pena-Garay, C.; Verde, L., 2017, JCAP, 06 029

61. "Early Cosmology Constrained"# **Verde, L.**, Bellini, E., Pigozzo C., Heavens A. F., Jimenez, R., 2017 JCAP 040 23, arXiv:1611.00376

62. "Hiding neutrino mass in modified gravity cosmologies" * # Nicola Bellomo, Emilio Bellini, Bin Hu, Raul Jimenez, Carlos Pena-Garay, **Licia Verde**, 2017, JCAP, 02043, arXiv: 1612.02598

63. "Constraining the time evolution of dark energy, curvature and neutrino properties with cosmic chronometers", Michele Moresco, Raul Jimenez, **Licia Verde**, Andrea Cimatti, Lucia Pozzetti, Claudia Maraston, Daniel Thomas, 2016, JCAP 12, 039, arXiv:1604.00183

64. The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: RSD measurement from the power spectrum and bispectrum of the DR12 BOSS galaxies, Hector Gil-Marin, Will J. Percival, **Licia Verde**, Joel R. Brownstein, Chia-Hsun Chuang, Francisco-Shu Kitaura, Sergio A. Rodriguez-Torres, Matthew D. Olmstead, 2017, MNRAS, 465, 1757, arXiv:1606.00439

65. "The length of the low-redshift standard ruler"# **Licia Verde**, Jose Luis Bernal, Alan F. Heavens, Raul Jimenez, MNRAS 2017, 476, 731, arXiv:1607.05297

66. "The Future of Primordial Features with Large-Scale Structure Surveys"*, Xingang Chen, Cora Dvorkin, Zhiqi Huang, Mohammad Hossein Namjoo, **Licia Verde**, 2016, JCAP, 11, 014, arXiv:1605.09365

67. "Neutrino footprint on large-scale structure"* Jimenez, Pena-Garay, **Verde**, 2016, PDU,15, 31 arXiv:1602.08430

68. "The trouble with H_0, Jose Luis Bernal, Licia Verde, Adam G. Riess, 2016, JCAP, 10, 019, arXiv:1607.05617.

69. "Red, Straight, no bends: primordial power spectrum reconstruction from CMB and large-scale structure"#, Andrea Ravenni, **Licia Verde**, Antonio J. Cuesta, JCAP in press 2016, arXiv:1605.06637

70. "Discrepancies between CFHTLenS cosmic shear & Planck: new physics or systematic effects? " Thomas D. Kitching, **Licia Verde**, Alan F. Heavens, Raul Jimenez, 2016, MNRAS, 459, 971, arXiv:1602.02960

71. "A 6% measurement of the Hubble parameter at $z \sim 0.45$: direct evidence of the epoch of cosmic re-acceleration" Michele Moresco, Lucia Pozzetti, Andrea Cimatti, Raul Jimenez, Claudia Maraston, **Licia Verde**, Daniel Thomas, Annalisa Citro, Rita Tojeiro, David Wilkinson, 2016, JCAP05014, arXiv:1601.01701.

72. "Neutrino mass limits: robust information from the power spectrum of galaxy surveys"*# Cuesta, A., Niro, V., **Verde, L.**, 2016, PDU, doi:10.1016/j.dark.2016.04.005, arXiv:151105983

73. "A relativistic signature in large-scale structure"* Bartolo, Nicola; Bertacca, Daniele; Bruni, Marco; Koyama, Kazuya; Maartens, Roy; Matarrese, Sabino; Sasaki, Misao; **Verde, Licia**; Wands, David, 2016, PDU, 13, 30, 10.1016/j.dark.2016.04.002, arXiv:150600915.

74. "Beyond ΛCDM: Problems, solutions, and the road ahead Bull et al. (incl.**L. Verde**) 2016, Physics of the Dark Universe, 94, 56, 10.1016/j.dark.2016.02.001, arXiv:151205356

75. "Parameter splitting in dark energy: is dark energy the same in the background and in the cosmic structures?"# Bernal, J.L., **Verde, L.**, Cuesta, A. J., JCAP 02 059, 2016, arXiv:15110349

76. "Cosmic explosions, life in the Universe and the Cosmological Constant"# Piran, Tsvi; Jimenez, Raul; Cuesta, Antonio J.; Simpson, Fergus; **Verde, Licia**, PRL, 116, 081301, 2016, arXiv:1508.01034

77. " Constraints on deviations from ΛCDM within Horndeski gravity"*#, Bellini, E., Cuesta, A., Jimenez, R., **Verde, L.**, JCAP, 02, 053, 2016, arXiv:150907816.

78. "Enhancing the Cosmic Shear Power Spectrum"# ** Simpson, F. Harnois-Deraps, J.; Heymans, C.; Jimenez, R.; **Verde, L.**, 2016, MNRAS 456, 278

79. "The clustering of galaxies in the SDSS-III Baryon Oscillation Spectroscopic Survey: Baryon Acoustic Oscillations in the correlation function of LOWZ and CMASS galaxies in Data Release 12"# Cuesta et al. (incl. **L. Verde**), 2016, MNRAS, 457, 1770, arXiv:150906371

80. "The power spectrum and bispectrum of SDSS DR11 BOSS galaxies II: cosmological interpretation"# **,
Hector Gil-Marin, **Licia Verde**, Jorge Noreña, Antonio J. Cuesta et al, 2015, MNRAS, 452, 1914, arXiv:1408.0027

81. "Signatures of Horndeski gravity on the Dark Matter Bispectrum"*# Bellini, Emilio; Jimenez, Raul; **Verde, Licia**, 2015 JCAP, 05 057, arXiv1504.5945

82. "The power spectrum and bispectrum of SDSS DR11 BOSS galaxies I: bias and gravity"(*,#), Hector Gil-Marin, Jorge Norena, **Licia Verde,** et al. 2015, MNRAS 451, 5058, 2015, arXiv:1407.5668.

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7. GROUP

Information about the ICC physical cosmology group can be found at:
http://sites.google.com//icc.ub.edu/liciaverde/ The current group is composed by:

Raul Jimenez, Faculty (Cosmology, theory, galaxy formation, stellar evolution)

Hector Gil-Marin, Postdoc (large-scale structure, galaxy surveys)

Nils Schoneberg, Postdoc (CMB, theory, inference)

Ben Giblin, Saltire Fellow (Clustering, Lensing, Statistics)

Davide Gualdi, ERC Postdoc (clustering, large-scale structure, theory)

Kathleen Short, La caixa PhD student (dark matter)

Samuel Brieden, PhD student (galaxy surveys)

Emanuele Fondi, La caixa fellowship PhD student (primordial non-gaussianity, N-body simulations)

Sergi Novell, PhD student (large-scale structure)