

# Valerio MARRA – Curriculum Vitae

August 21, 2019

Center for Astrophysics and Cosmology  
& Physics Department  
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ResearcherID: [researcherid.com/rid/H-3974-2012](http://researcherid.com/rid/H-3974-2012)

Citizenship: Italian

Languages: Italian (native), English (fluent), Portuguese (fluent)

## Main Areas of Research

Theoretical Cosmology – Dark Energy and Dark Matter – Gravitational Lensing – Inhomogeneous Cosmological Models – Data Analysis – Astrophysics of Galaxies – Physics beyond the Standard Model

## Education

Department of Physics, University of Padova, Italy.

Ph.D. in Physics, January 2005 – December 2007; graduation: March 14, 2008.

Thesis: *A Back-Reaction Approach to Dark Energy* (128 pages), [arXiv:0803.3152](https://arxiv.org/abs/0803.3152).

Advisor: Prof. Sabino Matarrese, Prof. Antonio Masiero.

Department of Physics, University of Padova, Italy.

Master’s degree (Laurea V.O.) in Physics, October 1999 – October 2004; graduation: October 12, 2004.

Thesis: *Fundamental constants and their variation induced by a cosmological scalar* (115 pages, in Italian).

Advisors: Prof. Antonio Masiero, Dr. Francesca Rosati. Final grade: 110/110 magna cum laude.

## Present Position

Physics Department, Federal University of Esp rito Santo, Brazil.

Assistant Professor (Professor Adjunto), November 10, 2014 – present day.

Head of the UFES undergraduate distance-learning course ([EAD](#)) in Physics, March 2018 – present day.

Member of the graduate programs [PPGCosmo](#) and [PPGFis](#).

## Previous Positions

Physics Institute, Federal University of Rio de Janeiro, Brazil.

“Science without Borders” Fellow, April 1, 2014 – October 31, 2014.

Group leader: Prof. Ioav Waga.

Institute for Theoretical Physics, Heidelberg University, Germany.

Postdoctoral Fellow, October 1, 2011 – March 31, 2014.

Group leader: Prof. Luca Amendola.

Department of Physics, University of Jyv skyl , Finland and

Helsinki Institute of Physics, University of Helsinki, Finland.

Postdoctoral Fellow, October 1, 2008 – September 30, 2011.

Group leader: Prof. Kimmo Kainulainen.

## Visiting Positions

Kavli Institute for Cosmological Physics (KICP), The University of Chicago, USA.

Visiting Postdoctoral Fellow, May-September 2008.

Collaboration with Prof. Edward W. Kolb.

Department of Astronomy and Astrophysics, The University of Chicago, USA.

Visiting Ph.D. Student, January-December 2007.

Collaboration with Prof. Edward W. Kolb.

## Professional Affiliations

- Full member of the J-PAS collaboration, 2014 – present day. Coordinator of the “Large Scale Structure” Science Working Group, 2018 – present day.
- Full member of the Euclid Consortium, 2013 – 2014. External collaborator, 2014 – present day (change due to the present non-European affiliation). Coordinator of the Work Package 5 “Deviations from Homogeneity and Isotropy” of the Theory Science Working Group between 2013-2017.
- PI in the LSST Brazilian Participation Group, 2019 – present day.
- INFN (National Institute of Nuclear Physics) member, Padova division, 2005-2008.

## Numerical codes

- `CalPriorSNIa` (Supernova Ia calibration prior) is available at [github.com/valerio-marra/CalPriorSNIa](https://github.com/valerio-marra/CalPriorSNIa).
- `mBayes` (Bayesian inference with Mathematica) is available at [github.com/valerio-marra/mBayes](https://github.com/valerio-marra/mBayes).
- I introduced in Ref. [36] the stochastic gravitational lensing (sGL) method to compute the lensing PDF for a desired model of the universe and I started the `turboGL` project. `turboGL` is a fast Mathematica code based on the sGL method. `turboGL` is available at [github.com/valerio-marra/turboGL](https://github.com/valerio-marra/turboGL).

## Grants and Awards (last 5 years, won as coordinator)

- 2016 – present day, **FAPES**: “Apoio à organização de eventos” (R\$13,000), “Apoio à participação em eventos” (R\$7,544), “Apoio à organização de eventos” (R\$11,500), Universal (R\$14,580).
- 2016 – present day, **CNPq**: “Produtividade em Pesquisa” fellowship (R\$39,600), APV (R\$5,000), Universal (R\$21,000), “Auxílio à Promoção de Eventos Científicos” (R\$16,000).
- 2015, Federal University of Espírito Santo: “Fundo de Apoio à Pesquisa” fellowship (R\$10,000).
- 2014, Federal University of Rio de Janeiro: Young Talent Attraction fellowship, level A (R\$319,000).

## Professional References

- Prof. Luca Amendola  
Institute for Theoretical Physics, Heidelberg University  
Philosophenweg 16, 69120 Heidelberg, Germany  
email: [l.amendola@thphys.uni-heidelberg.de](mailto:l.amendola@thphys.uni-heidelberg.de) phone: +49 6221 549407
- Prof. Kimmo Kainulainen  
Department of Physics, University of Jyväskylä  
Survontie 9, PL 35 (YFL), 40014 Jyväskylä, Finland  
email: [kimmo.kainulainen@jyu.fi](mailto:kimmo.kainulainen@jyu.fi) phone: +358 40 805 4692
- Prof. Edward W. Kolb  
Department of Astronomy and Astrophysics, The University of Chicago  
5747 South Ellis Avenue, 60637-2745 Chicago, Illinois, USA  
email: [rocky.kolb@uchicago.edu](mailto:rocky.kolb@uchicago.edu) phone: +1 773 702 7950
- Prof. Sabino Matarrese  
Department of Physics and Astronomy, University of Padova  
Via Marzolo 8, 35131 Padova, Italy  
email: [sabino.matarrese@pd.infn.it](mailto:sabino.matarrese@pd.infn.it) phone: +39 049 827 7120

# Valerio MARRA – Teaching and Advising

August 21, 2019

## Teaching

Federal University of Espírito Santo, Brazil.

Professor, November 10, 2014 – present day.

Undergraduate courses: astrophysics, electromagnetism, modern physics, special relativity, statistical physics, condensed matter. Appr. 30 students.

Graduate courses: general relativity, Bayesian inference. Appr. 10 students.

Courses of 60 hours, 4h per week, 1 semester.

Heidelberg University, Germany.

Teaching assistant, October 2011–March 2014.

Curricular courses of Cosmology, General Relativity and Computational Statistics.

University of Jyväskylä, Finland.

Teaching assistant, January–April 2010.

Curricular course of Cosmology.

## Advising

Undergraduate students (supervisor):

Vitor Leandro Pinto (2016 – DFIS/UFES, Brazil)

Maikon Barbosa de Araujo (2017 – DFIS/UFES, Brazil)

Ana Paula Jeakel (ongoing – DFIS/UFES, Brazil)

Elisa Dardengo Mendes Glória (ongoing – DFIS/UFES, Brazil)

Master students (supervisor):

David Camarena Torres (2018 – PPGFis/UFES, Brazil)

Rodrigo Duarte Silva (2018 – PPGFis/UFES, Brazil)

Ingrid Ferreira da Costa (2018 – PPGFis/UFES, Brazil)

Wesllen Hammet Rupf Ferreira (ongoing – PPGFis/UFES, Brazil)

Master students (co-supervisor):

Alexandre Posada (2013 – Heidelberg University, Germany – supervisor: Luca Amendola)

Caroline Heneka (2013 – Heidelberg University, Germany – supervisor: Luca Amendola)

Mikko Pääkkönen (2010 – University of Jyväskylä, Finland – supervisor: Kimmo Kainulainen)

PhD students (supervisor):

Eddy Giuseppe Chirinos Isidro (2019 – PPGFis/UFES, Brazil)

David Francisco Camarena Torres (ongoing – PPGCosmo/UFES, Brazil)

Rodrigo Duarte Silva (ongoing – PPGFis/UFES, Brazil)

Pedro Otávio Souza Baqui (ongoing – PPGFis/UFES, Brazil)

Tássia Andrade Ferreira (ongoing – PPGCosmo/UFES, Brazil)

PhD students (co-supervisor):

Mikko Pääkkönen (2014 – University of Jyväskylä, Finland – supervisor: Kimmo Kainulainen)

# Valerio MARRA – Scientific Meetings

August 21, 2019

## Organization of scientific events

1. *Gravitational Wave Challenges And Cosmology*, Natal, RN, Brazil. June 3-14, 2019.
2. *Verão Quântico 2019*, Ubu, Anchieta, ES, Brazil. February 17-22, 2019.
3. *IV José Plínio Baptista School of Cosmology*, Pedra Azul, ES, Brazil. October 15-19, 2018.
4. *XXXIX National Meeting on Particles and Fields* of the Brazilian Physical Society, Campos do Jordão, SP, Brazil. September 24-28, 2018.
5. *Inverno Astrofísico 2018*, Castelo, ES, Brazil. July 22-29, 2018.
6. *Interactions in the dark sector of the universe*, Santa Teresa, ES, Brazil. June 3-6, 2018.
7. *XXXVIII National Meeting on Particles and Fields* of the Brazilian Physical Society, Passa Quatro, MG, Brazil. September 18-22, 2017.
8. *III José Plínio Baptista School of Cosmology*, Pedra Azul, ES, Brazil. September 25-30, 2016.
9. *Black Holes and their Analogues*, Ubu-Anchieta, ES, Brazil. April 13-17, 2015.
10. *Seventh TRR33 Winter School*, Chair of organizing committee, Passo del Tonale, Italy, December 1-6, 2013.
11. *Sixth TRR33 Winter School*, Passo del Tonale, Italy, December 9-14, 2012.
12. *Fifth TRR33 Winter School*, Passo del Tonale, Italy, December 4-9, 2011.
13. *Workshop: Inhomogeneous Cosmologies*, Jyväskylä, Finland, August 15-19, 2011.

## Conferences (speaker)

1. *XL Encontro Nacional de Física de Partículas e Campos*, Campos do Jordão (SP), Brazil, 1-5/9/2019.  
Invited talk: “Model independent analyses in cosmology”.
2. *II South American Dark Matter Workshop*, São Paulo (SP), Brazil, November 21-23, 2018.  
Conference talk: “No fundamental acceleration scale in disk galaxies”.
3. *The Dark Energy Revolution in Cosmology*, Rio de Janeiro (RJ), Brazil, September 28, 2018.  
Invited talk: “No fundamental acceleration scale in disk galaxies”.
4. *IV CosmoSul*, ICTP-SAIFR, São Paulo (SP), Brazil, July 31 – August 2, 2017.  
Invited talk: “Clustering dark energy and halo abundances”.
5. *12th J-PAS Meeting*, CBPF, Rio de Janeiro (RJ), Brazil, April 11, 2016.  
Invited talk: “Testing homogeneity and isotropy with J-PAS”.
6. *Vith workshop challenges of new physics in space*, Campos do Jordão, SP, Brazil. May 24-29, 2015.  
Invited talk: “Lensing of point sources”.
7. *Verão Quântico*, João Pessoa, PB, Brazil. February 23-27, 2015.  
Invited talk: “Constraining perturbations with lensing of supernovae”.
8. *1º Workshop de Física Teórica do IFES*, IFES-Cariacica, Cariacica (ES), Brazil, December 19, 2014.  
Invited opening talk: “Observational Cosmology and the Euclid Mission”.
9. *2a Reunião Carioca de Cosmologia e Gravitação*, Rio de Janeiro State University (UERJ), Brazil, April 3-4, 2014. Invited talk: “Cosmology with SNe: signals and biases”.
10. *The Quest for Dark Energy*, Ringberg Castle, Germany, June 24-29, 2012.  
Invited talk: “Systematic search for systematic bias in SN Ia data”.
11. *Workshop: Inhomogeneous Cosmologies*, Jyväskylä, Finland, August 15-19, 2011.  
Invited talk: “Gravitational lensing with the sGL method”.
12. *Finnish Cosmophysics Meeting*, Tampere, Finland, April 20-21, 2011.  
Invited talk: “Gravitational lensing with the sGL method”.
13. *45th Rencontres de Moriond, Cosmology Session*, La Thuile, Italy, March 13-20, 2010.  
Conference talk: “Gravitational lensing and parameter extraction from SNe catalogues”.
14.  *$\Lambda$ -LTB Cosmology*, KEK, Tsukuba, Japan, October 20-23, 2009.  
Invited talk: “Toy models for the inhomogeneous universe”.
15. *Invisible Universe International Conference*, Palais de l’UNESCO, Paris, France, June 29-July 3, 2009. Conference talk: “Impact of cosmic inhomogeneities on observations”.
16. *SIGRAV School in Cosmology*, GGI, Firenze, Italy, January 26-29, 2009.  
Conference talk: “Cosmological background solutions and cosmological backreactions”.
17. *43rd Rencontres de Moriond, Cosmology Session*, La Thuile, Italy, March 15-22, 2008.  
Conference talk: “On cosmological observables in a swiss-cheese universe”.
18. Les Houches Summer School (Session LXXXIV) on *Particle Physics Beyond The Standard Model*, Les Houches, France, August 1-26, 2005.  
Title of the talk: “Cosmological evolution of alpha driven by a general coupling with quintessence”.

## Invited Institute Seminars

1. Padova University, Padova, Italy, February 21, 2019.  
Theory seminar: “Absence of a fundamental acceleration scale in galaxies”.
2. Universidad de Chile, Santiago, Chile, November 17, 2017.  
Theory seminar: “Clustering dark energy and halo abundances”.
3. ICTP-SAIFR, São Paulo (SP), Brazil, July 6, 2016.  
Theory seminar: “Constraining the halo mass function with observations”.
4. National Observatory, Rio de Janeiro (RJ), Brazil, February 24, 2016.  
Theory seminar: “Testing homogeneity and isotropy with J-PAS”.
5. UFES, Vitória (ES), Brazil, June 26, 2015.  
Theory seminar: “Coupling dark energy to dark matter inhomogeneities”.
6. National Observatory, Rio de Janeiro (RJ), Brazil, August 20, 2014.  
Theory seminar: “Signal and noise from lensing of point sources”.
7. Astronomy Unit, Queen Mary University of London, England, July 7, 2014.  
Theory seminar: “Lensing of point sources, inhomogeneous cosmology and robustness”.
8. Physics Institute, São Paulo University, Brazil, May 19, 2014.  
Theory seminar: “Cosmological information and bias from lensing of point sources”.
9. Institute for Theoretical Physics, Heidelberg University, Germany, March 12, 2014.  
Theory seminar: “so long, and thanks for all the Physik”.
10. Physics Institute, University of Bonn, Germany, February 11, 2014.  
Theory seminar: “Supernova cosmology: signals and biases”.
11. LUTH, Observatoire de Paris, France, June 5, 2013.  
Theory seminar: “Cosmological information from lensing of standard candles”.
12. Department of Physics, University of Jyväskylä, Finland, March 5, 2010.  
Theory seminar: “Modeling inhomogeneities in the universe”.
13. Institute for Theoretical Physics, Heidelberg University, Germany, October 7, 2009.  
Theory seminar: “Toy models for the inhomogeneous universe”.
14. Department of Physics, University of Jyväskylä, Finland, November 13, 2008.  
Theory seminar: “Cosmological background solutions and cosmological backreactions”.

# Valerio MARRA – Outreach

August 21, 2019

## Organization

1. *Universo no Parque*, Vitória, ES, Brazil. 2017 – ongoing. General-audience seminars in the parks of Vitória, with topics ranging from astronomy to physics.
2. *Universo no Escola*, Vitória, ES, Brazil. 2017 – ongoing. General-audience seminars in the public high schools of Vitória, with topics ranging from astronomy to physics.

## Seminars

1. 100 Anos do Eclipse de Sobral, UFES, Vitória (ES), Brazil, May 29-30, 2019.  
Title: “Cosmologia Moderna e Futura”.
2. Parque Botânico Vale, Vitória, ES, Brazil, May 13, 2018.  
Title: “O Brasil verá quase toda as galáxias observáveis!”.
3. Escola Duarte Rabelo, Vitória, ES, Brazil, June 22, 2018.  
Title: “O Brasil verá quase toda as galáxias observáveis!”.
4. Parque da Pedra da Cebola, Vitória, ES, Brazil, October 1, 2017.  
Title: “O Brasil verá quase toda as galáxias observáveis!”.
5. Seminari dell’Accademia della Marca Trevigiana, Roncade, TV, Italy, December 23, 2016.  
Title: “Le galassie dell’universo osservabile”.

## Publications

I have published in the journal [Philosophy and Cosmology](#) the following short story:

### [Understanding Our Only Universe](#)

Abstract: *In an imaginary dialogue between a professor and a layman about the future of cosmology, the said professor relates the paradoxical story of scientist Zee Prime, a bold thinker of a future civilization, stuck in a lonely galaxy, forever unaware of the larger universe. Zee Prime comes to acknowledge his position and shows how important it is to question standard models and status quo, as only the most imaginative ideas give us the chance to understand what he calls “our only universe” – the special place and time in which we live.*

# Valerio MARRA – Publications

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I am author of 39 Refereed Publications in the fields of cosmology and astrophysics. According to [Web of Science](#), I have about 1400+ citations and my h-index is 19. According to [inSPIRE \(inspire-hep.net/author/V.Marra.1\)](#), I have about 1400+ citations and my h-index is 20. I have 4 papers [9, 26, 39, 40] with 100+ citations and 4 papers [23, 30, 33, 35] with 50+ citations. I published 1 paper in *Nature Astronomy* [8], 2 papers in *Physical Review Letters* [34, 26], and 1 paper in *Monthly Notices of the Royal Astronomical Society Letters* [23]. The number of authors in my papers has a median of 3 and I have contributed substantially to planning, method and writing of all my works. The only exception is the Euclid review paper [9], regarding which I contributed mainly to Section IV.3 “Beyond homogeneity and isotropy” (18 pages).

## Publications under Review

- [1] D. Camarena and V. Marra, *Cosmology-independent local determination of  $H_0$  in strong tension with CMB*, [arXiv:1906.11814 \[astro-ph.CO\]](#).
- [2] Z. Davari, V. Marra, and M. Malekjani, *Cosmological constraints on minimally and non-minimally coupled scalar field models*, *Mon. Not. Roy. Astron. Soc.* **submitted**, [link to PDF](#) (2019).

## Refereed Publications in Journals

- [3] V. Marra and E. G. C. Isidro, *A first model-independent radial BAO constraint from the final BOSS sample*, *Mon. Not. Roy. Astron. Soc.* **487** (2019) 3419–3426, [arXiv:1808.10695 \[astro-ph.CO\]](#).
- [4] V. Marra, R. Rosenfeld, and R. Sturani, *Observing the dark sector*, *Universe* **5** (2019) no. 6, 137, [arXiv:1904.00774 \[astro-ph.CO\]](#).
- [5] R. von Marttens, V. Marra, L. Casarini, J. E. Gonzalez, and J. Alcaniz, *Null test for interactions in the dark sector*, *Phys. Rev.* **D99** (2019) no. 4, 043521, [arXiv:1812.02333 \[astro-ph.CO\]](#).
- [6] D. C. Rodrigues, V. Marra, A. Del Popolo, and Z. Davari, *Reply to “Presence of a fundamental acceleration scale in galaxies” and “A common Milgromian acceleration scale in nature”*, *Nat. Astron.* **2** (2018) no. 12, 927–929, [arXiv:1811.05882 \[astro-ph.GA\]](#).
- [7] D. Camarena and V. Marra, *The impact of the cosmic variance on  $H_0$  on cosmological analyses*, *Phys. Rev.* **D98** (2018) 023537, [arXiv:1805.09900 \[astro-ph.CO\]](#).
- [8] D. C. Rodrigues, V. Marra, A. del Popolo, and Z. Davari, *Absence of a fundamental acceleration scale in galaxies*, *Nat. Astron.* (2018), [arXiv:1806.06803 \[astro-ph.GA\]](#).
- [9] L. Amendola *et al.*, *Cosmology and fundamental physics with the Euclid satellite*, *Living Rev. Rel.* **21** (2018) no. 1, 2, [arXiv:1606.00180 \[astro-ph.CO\]](#).
- [10] V. Marra and D. Sapone, *Null tests of the standard model using the linear model formalism*, *Phys. Rev.* **D97** (2018) no. 8, 083510, [arXiv:1712.09676 \[astro-ph.CO\]](#).
- [11] R. C. Batista and V. Marra, *Clustering dark energy and halo abundances*, *JCAP* **1711** (2017) no. 11, 048, [arXiv:1709.03420 \[astro-ph.CO\]](#).
- [12] D. C. Rodrigues, A. del Popolo, V. Marra, and P. L. C. de Oliveira, *Evidence against cuspy dark matter haloes in large galaxies*, *Mon. Not. Roy. Astron. Soc.* **470** (2017) no. 2, 2410–2426, [arXiv:1701.02698 \[astro-ph.GA\]](#).
- [13] D. C. Torres and V. Marra, *Cosmological constraints on the radiation released during structure formation*, *Eur.Phys.J.C* **76** (2016) 644, [arXiv:1608.08824 \[astro-ph.CO\]](#).
- [14] T. Castro, V. Marra, and M. Quartin, *Constraining the halo mass function with observations*, *Mon.Not.Roy.Astron.Soc.* **463** (2016) 1666–1677, [arXiv:1605.07548 \[astro-ph.CO\]](#).



- [15] V. Marra, *Coupling dark energy to dark matter inhomogeneities*, *Phys.Dark Univ.* **13** (2016) 25–29, [arXiv:1506.05523 \[astro-ph.CO\]](#).
- [16] K. Yamamoto, V. Marra, V. Mukhanov, and M. Sasaki, *Perturbed Newtonian description of the Lemaitre model with non-negligible pressure*, *JCAP* **1603** (2016) no. 03, 030, [arXiv:1512.04240 \[gr-qc\]](#).
- [17] L. Amendola, T. Castro, V. Marra, and M. Quartin, *Constraining the growth of perturbations with lensing of supernovae*, *Mon.Not.Roy.Astron.Soc.* **449** (2015) 2845–2852, [arXiv:1412.3703 \[astro-ph.CO\]](#).
- [18] A. Piloyan, V. Marra, M. Baldi, and L. Amendola, *Linear Perturbation constraints on Multi-coupled Dark Energy*, *JCAP* **1402** (2014) 045, [arXiv:1401.2656 \[astro-ph.CO\]](#).
- [19] C. Heneka, V. Marra, and L. Amendola, *Extensive search for systematic bias in SN Ia data*, *Mon.Not.Roy.Astron.Soc.* **439** (2014) 1855–1864, [arXiv:1310.8435 \[astro-ph.CO\]](#).
- [20] M. Quartin, V. Marra, and L. Amendola, *Accurate weak lensing of standard candles. II. Measuring  $\sigma_8$  with Supernovae*, *Phys.Rev.* **D89** (2014) 023009, [arXiv:1307.1155 \[astro-ph.CO\]](#).
- [21] W. Valkenburg, M. Kunz, and V. Marra, *Intrinsic uncertainty on the nature of dark energy*, *Phys.Dark Univ.* **2** (2013) 219–223, [arXiv:1302.6588 \[astro-ph.CO\]](#).
- [22] I. Sawicki, V. Marra, and W. Valkenburg, *Seeding supermassive black holes with a nonvortical dark-matter subcomponent*, *Phys.Rev.* **D88** (2013) 083520, [arXiv:1307.6150 \[astro-ph.CO\]](#).
- [23] W. Valkenburg, V. Marra, and C. Clarkson, *Testing the Copernican principle by constraining spatial homogeneity*, *Mon.Not.Roy.Astron.Soc.* **L** (2013) , [arXiv:1209.4078 \[astro-ph.CO\]](#).
- [24] V. Marra, M. Quartin, and L. Amendola, *Accurate weak lensing of standard candles. I. Flexible cosmological fits*, *Phys.Rev.* **D88** (2013) 063004, [arXiv:1304.7689 \[astro-ph.CO\]](#).
- [25] A. Piloyan, V. Marra, M. Baldi, and L. Amendola, *Supernova constraints on multi-coupled dark energy*, *JCAP* **1307** (2013) 042, [arXiv:1305.3106 \[astro-ph.CO\]](#).
- [26] V. Marra, L. Amendola, I. Sawicki, and W. Valkenburg, *Cosmic Variance and the Measurement of the Local Hubble Parameter*, *Phys.Rev.Lett.* **110** (2013) 241305, [arXiv:1303.3121 \[astro-ph.CO\]](#).
- [27] V. Marra, M. Paakkonen, and W. Valkenburg, *Uncertainty on  $w$  from large-scale structure*, *Mon.Not.Roy.Astron.Soc.* **431** (2013) 1891–1902, [arXiv:1203.2180 \[astro-ph.CO\]](#).
- [28] L. Amendola, V. Marra, and M. Quartin, *Internal Robustness: systematic search for systematic bias in SN Ia data*, *Mon.Not.Roy.Astron.Soc.* **430** (2013) 1867–1879, [arXiv:1209.1897 \[astro-ph.CO\]](#).
- [29] V. Marra and M. Paakkonen, *Exact spherically symmetric inhomogeneous model with  $n$  perfect fluids*, *JCAP* **1201** (2012) 025, [arXiv:1105.6099 \[gr-qc\]](#).
- [30] V. Marra and A. Notari, *Observational constraints on inhomogeneous cosmological models without dark energy*, *Class.Quant.Grav.* **28** (2011) 164004, [arXiv:1102.1015 \[astro-ph.CO\]](#).
- [31] K. Kainulainen and V. Marra, *Weak lensing observables in the halo model*, *Phys.Rev.* **D84** (2011) 063004, [arXiv:1101.4143 \[astro-ph.CO\]](#).
- [32] K. Kainulainen and V. Marra, *Accurate modeling of weak lensing with the stochastic gravitational lensing method*, *Phys.Rev.* **D83** (2011) 023009, [arXiv:1011.0732 \[astro-ph.CO\]](#).
- [33] V. Marra and M. Paakkonen, *Observational constraints on the ALTB model*, *JCAP* **1012** (2010) 021, [arXiv:1009.4193 \[astro-ph.CO\]](#).
- [34] L. Amendola, K. Kainulainen, V. Marra, and M. Quartin, *Large-Scale Inhomogeneities May Improve the Cosmic Concordance of Supernovae*, *Phys.Rev.Lett.* **105** (2010) 121302, [arXiv:1002.1232 \[astro-ph.CO\]](#).

- [35] E. W. Kolb, V. Marra, and S. Matarrese, *Cosmological background solutions and cosmological backreactions*, *Gen.Rel.Grav.* **42** (2010) 1399–1412, [arXiv:0901.4566](#) [[astro-ph.CO](#)].
- [36] K. Kainulainen and V. Marra, *New stochastic approach to cumulative weak lensing*, *Phys.Rev.* **D80** (2009) 123020, [arXiv:0909.0822](#) [[astro-ph.CO](#)].
- [37] K. Kainulainen and V. Marra, *Supernovae observations in a “meatball” universe with a local void*, *Phys.Rev.* **D80** (2009) 127301, [arXiv:0906.3871](#) [[astro-ph.CO](#)].
- [38] E. W. Kolb, V. Marra, and S. Matarrese, *Description of our cosmological spacetime as a perturbed conformal Newtonian metric and implications for the backreaction proposal for the accelerating universe*, *Phys.Rev.* **D78** (2008) 103002, [arXiv:0807.0401](#) [[astro-ph](#)].
- [39] V. Marra, E. W. Kolb, and S. Matarrese, *Light-cone averages in a Swiss-cheese universe*, *Phys.Rev.* **D77** (2008) 023003, [arXiv:0710.5505](#) [[astro-ph](#)].
- [40] V. Marra, E. W. Kolb, S. Matarrese, and A. Riotto, *Cosmological observables in a Swiss-cheese universe*, *Phys.Rev.* **D76** (2007) 123004, [arXiv:0708.3622](#) [[astro-ph](#)].
- [41] V. Marra and F. Rosati, *Cosmological evolution of alpha driven by a general coupling with quintessence*, *JCAP* **0505** (2005) 011, [arXiv:astro-ph/0501515](#) [[astro-ph](#)].

#### Refereed Publications in other fields

- [42] V. Marra, *Understanding Our Only Universe*, *Philosophy and Cosmology* **19** (2017) 50–54. [http://ispcjournal.org/journals/2017-19/Marra\\_19.pdf](http://ispcjournal.org/journals/2017-19/Marra_19.pdf).
- [43] L. Amendola, V. Marra, and M. Quartin, *The evolving perception of controversial movies*, *Palgrave Communications* **1** (2015) 15038, [arXiv:1512.07893](#) [[physics.soc-ph](#)].

#### Publications in Conference Proceedings

- [44] D. C. Rodrigues, V. Marra, A. del Popolo, and Z. Davari, *Investigating the absence of fundamental acceleration scale in galaxies*, in *Conference on Gravitation and Cosmology in 1397*, IPM Proceedings, pp. 43–46. 2019.
- [45] C. Heneka, A. Posada, V. Marra, and L. Amendola, *Searching for bias and correlations in a Bayesian way - Example: SN Ia data*, in *Statistical Challenges in 21st Century Cosmology*, vol. 10 of *Proceedings of the International Astronomical Union*, pp. 19–21. 5, 2014. [arXiv:1407.2531](#) [[astro-ph.CO](#)]. [http://journals.cambridge.org/article\\_S1743921315000010](http://journals.cambridge.org/article_S1743921315000010).
- [46] V. Marra, *Gravitational lensing and parameter extraction from SNe catalogues*, in *45th Rencontres de Moriond, Cosmology Session*, J. D. Etienne Augé and J. T. T. Vâ, eds. Thê Giói Publisher, 2010.
- [47] K. Kainulainen and V. Marra, *Impact of cosmic inhomogeneities on SNe observations*, in *Invisible Universe International Conference*, J.-M. Alimi and A. Fuözfa, eds., vol. 1241, pp. 1043–1050. 2010. [arXiv:0911.5584](#) [[astro-ph.CO](#)].
- [48] V. Marra, *On cosmological observables in a swiss-cheese universe*, in *43rd Rencontres de Moriond, Cosmology Session*, Y. G.-H. Jacques Dumarchez and J. T. T. Vâ, eds. Thê Giói Publisher, 2008. [arXiv:0805.4233](#) [[astro-ph](#)].

#### Dissertations

- [49] V. Marra, *A back-reaction approach to dark energy*. Ph.d. thesis, Department of Physics, University of Padua, March, 2008. [arXiv:0803.3152](#) [[astro-ph](#)]. <http://paduaresearch.cab.unipd.it/588>. Advisors: Prof. Sabino Matarrese, Prof. Antonio Masiero.
- [50] V. Marra, *The fundamental constants and their variation induced by a cosmological scalar*, master thesis, Department of Physics, University of Padua, October, 2004. <http://www.turboglu.org/stuff/MThesis.pdf>. Advisors: Prof. Antonio Masiero, Dr. Francesca Rosati.

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## Valerio Marra

<https://publons.com/a/1329944>

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### Peer Review Summary

Performed 46 reviews for journals including *Physical Review D* and *Journal of Cosmology and Astroparticle Physics*; placing in the 96th percentile for verified review contributions on Publons up until August 2019.

	20	Physical Review D
	6	Journal of Cosmology and Astroparticle Physics
	4	Physics of the Dark Universe
	3	Classical and Quantum Gravity
	2	Physical Review Letters
	2	Monthly Notices of the Royal Astronomical Society
	2	Physics Letters B
	1	The European Physical Journal C
	1	Advances in High Energy Physics
	1	General Relativity and Gravitation
	1	Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences
	1	International Journal of Modern Physics D
	1	Universe
	1	Aeronautics and Aerospace Open Access Journal

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