

José Luis Bernal

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| RESEARCH INTERESTS | Cosmology: large-scale structure, line-intensity mapping, cosmic infrared background, dark matter, Hubble constant tension, agnostic modeling and data analysis, neutrino cosmology, primordial non-Gaussianity, blinding methods in cosmology. | |
| PROFESSIONAL CAREER | - Institute of Physics of Cantabria (IFCA), Investigador Científico (tenured) Consejo Superior de Investigaciones Científicas | Jun 2025 – present |
| | - Institute of Physics of Cantabria (IFCA), Ramón y Cajal Fellow University of Cantabria | Jan 2023 – Jun 2025 |
| | - Max Planck Institute for Astrophysics, Postdoctoral research fellow | Oct 2022 – Dec 2022 |
| | - Johns Hopkins University, Davis Postdoctoral Fellowship Department of Physics and Astronomy | Oct 2019 – Sept 2022 |
| | - University of Barcelona, FPI fellow PhD Candidate Quantum Physics and Astrophysics Department, Institute of Cosmos Sciences | Sept 2015 – Sept 2019 |
| EDUCATION | - Ph.D. in Physics, University of Barcelona PhD Thesis: <i>Cosmology on the edge of ΛCDM</i> , (excellent <i>Summa Cum Laude</i>) Advisor: Licia Verde | Sept 2019 |
| | - M.Sc. in Theoretical Physics, Universidad Autónoma de Madrid Master Thesis: <i>A consistency test of General Relativity using Expansion History and Growth of Structures</i> Advisors: Licia Verde, Antonio J. Cuesta, Alexander Knebe | June 2015 |
| | - Bachelor Degree in Physics with honors, Universidad Autónoma de Madrid | June 2014 |
| HONORS & AWARDS | - Ramón y Cajal fellowship, Spanish ‘Agencia Estatal de Investigación’ | 2022 |
| | - Second Prize of the XXV Prize ‘Claustre de Doctors’ of the University of Barcelona | 2021 |
| | - Doctoral Extraordinary Prize at the University of Barcelona, class 2018-2019 | 2021 |
| | - Spanish Astronomy Society Thesis Prize to the best Doctoral Thesis in A&A | 2020 |
| | - Allan C. and Dorothy H. Davis Postdoctoral Fellowship, JHU | 2019 |
| | - FPI Fellowship for the formation of doctors, Spanish MINECO | 2015 |
| | - Postgraduate Fellowship to study the Master in Theoretical Physics, UAM+CSIC | 2014 |
| GRANTS | - Extraordinary Prize for the Best Academic Record of Physics 2014 Class, UAM | 2014 |
| | - Proyectos de Generación de Conocimiento, PID2022-140670NA-I00, <i>Understanding the Cosmos with Line-Intensity Mapping Experiments</i> , MCIN/AEI, PI: José Luis Bernal, 01/09/2023-01/09/2026, 155,625.00 €, role: PI. | |
| | - Ramón y Cajal Grant, RYC2021-033191-I, MCIN/AEI, 01/01/2023-31/12/2027, 244,350.00 €, role: PI. | |
| | - Allan C. and Dorothy H. Davis Fellowship grant 2019, Johns Hopkins University, PI: José Luis Bernal, 01/10/2019 - 30/09/2022, \$224,228.00, role: PI | |

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| TEACHING | <ul style="list-style-type: none"> - Lecturer at University of Cantabria (Master: Particle Physics and Physics of the Cosmos) 2023-present - Lecturer at Galileo Galilei Institute (Theoretical Aspects of APCG 2023, PhD school) "Cosmic Tensions" 27-31 March 2023 - Teaching Assistant at the University of Barcelona <ul style="list-style-type: none"> Astronomy Spring 2017 Ordinary Differential Equations and Vector Calculus Spring 2017, Spring 2018 |
| PEER REVIEW | <ul style="list-style-type: none"> - Editor of Journal of Cosmology and Astroparticle Physics 2025 - current - Astrophysics and cosmology journals, including: <ul style="list-style-type: none"> ApJ, JCAP, A&A, MNRAS, PDU, EPJC, Universe, IJMPD - Grant reviewer: <ul style="list-style-type: none"> Dutch Research Council (NWO) Open Competition Domain Science - M 2023 Universidad Computense de Madrid's program 'Ayudas para la realización de proyectos I+D para jóvenes doctores' 2022 External reviewer for NASA's FINESST program 2020, 2021, 2022 |
| MENTORING & SUPERVISION | <ul style="list-style-type: none"> - Supervision of graduate students: <ul style="list-style-type: none"> Sefa Pamuk, PhD candidate at UC, May 2024-May 2028 - Supervision of 4 undergraduate students: |
| PUBLICATION METRICS | <p>45 refereed journal publications (17 first-authored), 3000+ citations, h-index=27</p> <p>6 additional articles submitted (to PRD, A&A, and JCAP).</p> |
| OUTREACH | <ul style="list-style-type: none"> - Speaker in 'Expanding Science' - talks in primary and secondary schools 2024 - present - The Universe: a window for discovery - Public talk, Casa de la Ciencia de Sevilla 2024 - The Universe: a window to fundamental physics - Public talk, Science Center Benasque 2023 - Round table about dark matter for the "Dark Matter Day" 2018 - At what speed does the Universe expands? - Invited talk, Sabadell Astronomy Group 2018 - Unravelling the dark Universe - Exhibition about cosmology, gravity and black holes 2017 - Physics Experiments - UB (demonstrations for High school students) 2016, 2017, 2018 - Walk on the Dark Side - Invited talk for Physics bachelor students 2016 - Physis - UB (demonstrations for High school students) 2016 |
| PROFESSIONAL ACTIVITIES | <ul style="list-style-type: none"> - SOC member in "Line-Intensity Mapping 2025" 2025 - SOC member in "Line-Intensity Mapping 2024" 2024 - LOC member in "Dark Matter 2023: From the Smallest to the Largest Scales" 2023 - Main organizer, SOC+LOC member of "Present and Future of Line-Intensity Mapping" 2023 - Postdoc representative in the "Joint JHU/STScI Colloquium Committee" 2021 - 2022 - Founder and coordinator of "Physics and Astronomy Postdocs and Research Scientists" association at JHU 2020 - 2022 - Organizer of the "Particle theory seminars" at JHU 2020 - 2022 - Founder and organizer of the "PhD & Science" meetings at the ICCUB 2018 - 2019 - LOC member in "Venice Cosmology Workshop 2018: The Island" 2018 |
| VISITING RESEARCH | <ul style="list-style-type: none"> - Department of Physics and Astronomy, JHU (funded by María de Maeztu) April 2018 - Institute for Astronomy, University of Edinburgh (funded by ICCUB) October 2017 - Radcliffe Institute of Advanced Study, Harvard (funded by FPI fellowship) April - Jun 2016 |

REFERENCES

Marc Kamionkowski

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LIST OF
PUBLICATIONS

1. S. Wang, A. Baleato Lizancos and **J. L. Bernal**. *Delensing CMB B-modes using galaxy surveys: the effect of galaxy bias and matter clustering non-linearities* - arXiv:2507.04666.
2. N. Lee, **J. L. Bernal**, S. Günter, L. Ji and M. Kamionkowski. *Rapid and accurate numerical evolution of linear cosmological perturbations with non-cold relics* - arXiv:2506.01956.
3. MeerKLASS collaboration: Z. Chen, S. Cunnington, A. Pourtsidou, L. Wolz, M. Spinelli, **J. L. Bernal**, et al. *Emission line stacking of 21cm intensity maps with MeerKLASS: Inference pipeline and application to the L-band deep-field data* - arXiv:2504.03908.
4. I. P. Carucci, **J. L. Bernal**, S. Cunnington, M. Santos, J. Wang, J. Fonseca, K. Grainge, M. O. Irfan, Y. Li, A. Pourtsidou, M. Spinelli, L. Wolz. *Hydrogen intensity mapping with MeerKAT: Preserving cosmological signal by optimising contaminant separation* - arXiv:2412.06750.
5. T. Simon, T. Adi, **J. L. Bernal**, E. D. Kovetz, V. Poulin, T. L. Smith. *Towards alleviating the H_0 and S_8 tensions with Early Dark Energy - Dark Matter drag* - PRD, 111, 023523 - arXiv:2410.21459.
6. B. Zhou, **J. L. Bernal**, E. Pinetti, H. A. G. Cruz, M. Kamionkowski. *Cross Correlating the Unresolved Gamma-Ray Background with Cosmic Large-Scale Structure from DESI: Implications for Astrophysics and Dark Matter* - arXiv:2410.00375.
7. MeerKLASS collaboration: M. Barberi-Squarotti, **J. L. Bernal**, et al. *MeerKLASS L-band deep-field intensity maps: entering the HI dominated regime* - MNRAS, 537, 4, 3632-3661 - arXiv:2407.21626.
8. **J. L. Bernal**, A. Baleato Lizancos. *Removal of interloper contamination to line-intensity maps using correlations with ancillary tracers of the large-scale structure* - PRD, 111, 043539 - arXiv:2406.12979.
9. N. Kokron, **J. L. Bernal**, J. Dunkley. *On the contributions of extragalactic CO emission lines to ground-based CMB observations* - PRD 110, 103535 - arXiv:2405.20369.
10. V. I. Sabla, **J. L. Bernal**, G. Sato-Polito, M. Kamionkowski. *Unlocking New Physics with Joint Power Spectrum and Voxel Intensity Distribution Forecasts in Line-Intensity Mapping* - PRD, 110, 023507 - arXiv:2404.11609.
11. **J. L. Bernal**. *Towards Accurate Modelling of Line-Intensity Mapping One-Point Statistics: Including Extended Profiles* - PRD, 109, 043517 - arXiv:2309.06481.
12. M. Lujan Niemeyer, **J. L. Bernal**, E. Komatsu. *SIMPLE: Simple Intensity Map Producer for Line Emission* - ApJ, 958, 1, 4 - arXiv:2307.08475,
13. G. Sato-Polito, N. Kokron, **J. L. Bernal**. *A multi-tracer empirically-driven approach to line-intensity mapping lightcones* - MNRAS, 526, 5883 - arXiv:2212.08056.
14. V. Poulin, **J. L. Bernal**, E. D. Kovetz, M. Kamionkowski. *The Sigma-8 Tension is a Drag* - PRD 107, 123538 - arXiv:2209.06217.
15. **J. L. Bernal**, A. Caputo, G. Sato-Polito, J. Mirocha, M. Kamionkowski. *Seeking dark matter with γ -ray attenuation* - PRD, 107, 101346 - arXiv:2208.13794.
16. **J. L. Bernal** and E. D. Kovetz. *Line-Intensity Mapping: Theory Review* - The Astronomy and Astrophysics Review, 30, 5 - arXiv:2206.15377.
17. W. D. Kenworthy, A. G. Riess, D. Scolnic, W. Yuan, **J. L. Bernal**, D. Brout, S. Cassertano, D. O. Jones, L. Macri, E. Peterson. *Measurements of the Hubble Constant with a Two Rung Distance Ladder: Two Out of Three Ain't Bad* - ApJ 935, 2, 83 - arXiv:2204.10866.
18. K. Short, **J. L. Bernal**, K. K. Boddy, V. Gluscevic, L. Verde. *Dark matter-baryon scattering effects on temperature perturbations an implications for cosmic* - arXiv:2203.16524.
19. **J. L. Bernal**, G. Sato-Polito, M. Kamionkowski. *The cosmic optical background excess, dark matter, and line-intensity mapping* - PRL, 129, 231301 - arXiv:2203.11236.

20. G. Sato-Polito, **J. L. Bernal**. *Analytical covariance between voxel intensity distributions and line-intensity mapping power spectra* - PRD, 106, 103534 - arXiv:2202.02330.
21. L. Ji, M. Kamionkowski, **J. L. Bernal**. *Cosmological perturbations: non-cold relics without the Boltzmann hierarchy* - PRD, 106, 103531 - arXiv:2201.11129.
22. **J. L. Bernal**, A. Caputo, F. Villaescusa-Navarro, M. Kamionkowski. *Detecting the radiative decay of the cosmic neutrino background with line-intensity mapping* - PRL, 127, 131102 - arXiv:2103.12099.
23. D. Valcin, R. Jimenez, L. Verde, **J. L. Bernal**, B. D. Wandelt. *The Age of the Universe with Globular Clusters: Reducing Systematic Uncertainties* - JCAP08(2021)017 - arXiv:2102.04486.
24. G. C.-F. Chen, C. D. Fassnacht, S. H. Suyu, A. Yildirim, E. Komatsu, **J. L. Bernal**. *TDCOSMO VI: Distance Measurements in Time-delay Cosmography under the Mass-sheet transformation* - A&A 652, A7 - arXiv:2011.06002.
25. M. B. Silva, E. D. Kovetz, G. K. Keating, A. M. Dizgah, M. Bethermin, P. C. Breysse, K. Karkare, **J. L. Bernal** and J. Dellabrouille, *Mapping large-scale-structure evolution over cosmic times* - Experimental Astronomy (2021) - arXiv:1908.07533.
26. J. Delabrouille et al. (incl. **J. L. Bernal**) - *Microwave spectro-polarimetry of matter and radiation across space and time* - Experimental Astronomy (2021) - arXiv:1909.01591.
27. T. L. Smith, V. Poulin, **J. L. Bernal**, K. K. Boddy, M. Kamionkowski, R. Murgia. *Early dark energy is not excluded by current large-scale structure data* - PRD, 103, 123542 - arXiv:2009.10740.
28. **J. L. Bernal**, L. Verde, R. Jimenez, M. Kamionkowski, D. Valcin, B. D. Wandelt. *The trouble beyond H_0 and the new cosmic triangles* - PRD, 103, 103533 - arXiv:2102.05066.
29. G. Sato-Polito, **J. L. Bernal**, K. K. Boddy, M. Kamionkowski. *Kinetic Sunyaev-Zel'dovich tomography with line-intensity mapping* - PRD, 103, 083519 - arXiv: 2011.08193.
30. **J. L. Bernal**, A. Caputo, M. Kamionkowski. *Strategies to Detect Dark-Matter Decays with Line-Intensity Mapping* - PRD, 103, 063523 - arXiv: 2012.00771.
31. **J. L. Bernal**, T. L. Smith, K. K. Boddy and M. Kamionkowski. *Robustness of baryon acoustic oscillation constraints for early-Universe modifications of Λ CDM cosmology* - PRD, 102, 123515 - arXiv:2004.07263.
32. A. Rida Khalifeh, N. Bellomo, **J. L. Bernal** and R. Jimenez, *Can Dark Matter be Geometry? A Case Study with Mimetic Dark Matter* - PDU, 30, 100646 - arXiv:1907.03660.
33. D. Valcin, **J. L. Bernal**, R. Jimenez, L. Verde, B. D. Wandelt. *Inferring the Age of the Universe with Globular Clusters* - JCAP12(2020)002 - arXiv:2007.06594.
34. **J. L. Bernal**, N. Bellomo, A. Raccanelli, L. Verde. *Beware of commonly used approximations II: estimating systematic biases in the best-fit parameters* - JCAP10(2020)017 - arXiv:2005.09666.
35. N. Bellomo, **J. L. Bernal**, G. Scelfo, A. Raccanelli, L. Verde. *Beware of commonly used approximations I: errors in forecasts* - JCAP10(2020)016 - arXiv:2005.10384.
36. S. Brieden, H. Gil-Marín, L. Verde, **J. L. Bernal**. *Blind Observers of the Sky* - JCAP09(2020)052 - arXiv:2006.10857.
37. G. Sato-Polito, **J. L. Bernal**, E. D. Kovetz and M. Kamionkowski. *Antisymmetric cross-correlation of line-intensity maps as a probe of reionization* - PRD, 102, 043519 - arXiv:2005.08977.
38. K. Short, **J. L. Bernal**, A. Raccanelli, L. Verde and J. Chluba. *Enlightening the dark ages with dark matter* - JCAP07(2020)020 - arXiv:1912.07409.

39. Square Kilometre Array Cosmology Science Working Group (Incl. **J. L. Bernal**). *Cosmology with Phase 1 of the Square Kilometre Array; Red Book 2018: Technical specifications and performance forecasts* - PASA, 37, e007, 2020 - arXiv:1811.02743.
40. **J. L. Bernal**, P. Breysse and E. D. Kovetz, *The Cosmic Expansion History from Line-Intensity Mapping* - PRL, 123, 251301 - arXiv:1907.10065.
41. **J. L. Bernal**, P. Breysse, H. Gil-Marín and E. D. Kovetz, *A User's Guide to Extracting Cosmological Information from Line-Intensity Maps* - PRD, 100, 123522 - arXiv:1907.10067.
42. **J. L. Bernal**, A. Raccanelli, E. D. Kovetz, D. Parkinson, R. P. Norris, G. Danforth and C. Schmitt. *Probing Λ CDM cosmology with the Evolutionary Map of the Universe survey* - JCAP02(2019)030 - arXiv:1810.06672.
43. B. Kalus, W. J. Percival, D. J. Bacon, E. M. Mueller, L. Samushia, L. Verde, A. J. Ross and **J. L. Bernal**. *A map-based method for eliminating systematic modes from galaxy clustering power spectra with application to BOSS* - MNRAS, 482, 453 - arXiv:1806.02789.
44. F. D'Eramo, R. Z. Ferreira, A. Notari, and **J. L. Bernal**. *Hot axions and the H_0 tension* - JCAP11(2018)014 - arXiv:1808.07430.
45. **J. L. Bernal** and J. A. Peacock. *Conservative cosmology: combining data with allowance for unknown systematics* - JCAP07(2018)002 - arXiv:1803.04470.
46. **J. L. Bernal**, A. Raccanelli, L. Verde and J. Silk. *Signatures of primordial black holes as seeds of supermassive black holes* - JCAP05(2018)017 - arXiv:1712.01311.
47. N. Bellomo, **J. L. Bernal**, A. Raccanelli and L. Verde. *Primordial Black Holes as Dark Matter: Converting Constraints from Monochromatic to Extended Mass Distributions* - JCAP01(2018)004 - arXiv:1709.07467.
48. **J. L. Bernal**, N. Bellomo, A. Raccanelli and L. Verde. *Cosmological implications of primordial black holes* - JCAP10(2017)052 - arXiv:1709.07465.
49. L. Verde, **J. L. Bernal**, A. Heavens and R. Jimenez. *The length of the low-redshift standard ruler* - MNRAS, 467, 731 - arXiv:1607.05297.
50. **J. L. Bernal**, L. Verde and A. G. Riess. *The trouble with H_0* - JCAP10(2016)019 - arXiv:1607.05617.
51. **J. L. Bernal**, L. Verde and A. J. Cuesta. *Parameter splitting in dark energy: is dark energy the same in the background and in the cosmic structures* - JCAP02(2016)059 - arXiv:1511.03049.

SEMINARS & TALKS

- *Contributions of extragalactic emission lines to ground-based CMB observations* - Contributed talk at LIM2025, LAPTh, France, June 2025.
- *Current landscape of Line-Intensity Mapping* - Seminar at IFAE, Spain, May 2025.
- *Line-Intensity Mapping: Opportunities, challenges and new windows for new physics* - Invited talk at 'IberICOS 2025' at University of Coimbra, Portugal, April 2025.
- *Current status of Line-Intensity Mapping and promises for the future* - Invited talk for the 'CosmoVerse' seminar series, online, February 2025.
- *Current status of Line-Intensity Mapping and steps forward* - Invited talk at 'Fundamental Physics Meets Current and Future Facilities in Cosmology' at ICTP SAIFR, Brasil, December 2024.
- *On the contributions of extragalactic CO emission lines to ground-based CMB observations* - Contributed talk at 'X Meeting on Fundamental Cosmology' at University of Sevilla, Spain, October 2024.

- *Tensions in cosmology* - Invited talk at the ‘XLIX International Meeting on Fundamental Physics’ at the Bidasoa Science Center, Spain - September 2024.
- *Potential and challenges of Line-Intensity Mapping* - Invited seminar for the Cambridge University 21cm research group - June 2024.
- *(Partially) nulling statistical contributions from interlopers to the LIM power spectrum*, contributed talk at ‘LIM2024’ at University of Illinois in Urbana Champaign, US - June 2024.
- *Line-Intensity Mapping for New Physics* - Invited talk at the ‘4th EuCAPT Annual Symposium’ at CERN, Switzerland - May 2024.
- *Perspectives from the LIM glass* - Invited talk at the RAS meeting ‘A multi-tracer view of galaxies in the first few billion years’ at London, UK - February 2024.
- *New views of the Universe with Line-intensity mapping* - Seminar at University of Sussex, UK - February 2024.
- *Line-intensity mapping: new eyes to explore the Universe* - Invited seminar at DIPC, San Sebastian, Spain - October 2023.
- *Cosmology with LIM: combining $P(k)$ and 1-point statistics* - COSMO’23 conference, Madrid, Spain - September 2023.
- *Multi-electronvolt axion-like particle dark matter: cosmic optical background, blazars, and line-intensity mapping* - Seminar at the Center for Cosmology and Particle Physics at New York University (CCPP-NYU) - June 2023.
- *Seeking dark matter with γ -ray attenuation* - Contributed talk at “Dark Matter 2023: From the Smallest to the Largest Scales” conference, Santander, Spain - May 2023.
- *Cosmic optical background, blazars, and line-intensity mapping view for multi-electronvolt axion-like particle dark matter* - Seminar at the University of the Study in Milan - April 2023.
- *Multi-electronvolt axion-like particle dark matter: cosmic optical background, blazars, and line-intensity mapping* - Invited seminar at the University of California, Santa Cruz - February 2023.
- *Line-intensity mapping: challenges and opportunities* - Invited seminar at the Max Planck for Extraterrestrial Physics, Germany - November 2022.
- *The potential of line-intensity mapping and how to fulfill it* - Invited seminar at the Max Planck Institute for Astrophysics, Germany - October 2022.
- *Optimizing information return from line-intensity mapping* - Contributed talk at “Lyman-X day” workshop, Garching, Germany - October 2022.
- *Primordial non-Gaussianity with Line-Intensity Mapping* - Contributed talk at “A cosmic Window to Fundamental Physics: Primordial Non-Gaussianity and Beyond” conference, Madrid, Spain - September 2022.
- *Seeking axion-like particles with gamma-ray attenuation* - invited talk at “Particle Avenues in the Dark Universe Arena: Axions” workshop, Italy - September 2022.
- *Looking for multi-electronvolt axion-like particle dark matter on the sky* - invited seminar at IFCA, Spain - September 2022.
- *Seeking dark matter with γ -ray attenuation* - contributed talk at “Vipolze conference”, Slovenia - July 2022.
- *The cosmic optical background excess and dark matter* - contributed talk at “Second EuCAPT Annual Symposium”, virtual conference - May 2022.

- *On the importance of temperature perturbations sourced by dark matter-baryon scattering* - contributed talk at “Reionization and Cosmic Dawn: Looking Forward to the Past”, UC Berkeley - March 2022.
- *Exploring the Universe with Line-Intensity Mapping* - invited seminar at Institute of Cosmos Sciences (ICC-UB) - January 2022.
- *Using line-intensity mapping to look for exotic radiative decays* - invited seminar at University of Maryland - September 2021.
- *Searching for exotic radiative decays with line-intensity mapping* - contributed talk at KICP LIM Workshop, Chicago University - July 2021.
- *The trouble with H_0 (and beyond)* - invited seminar at Clemson University - May 2021.
- *Dark matter and neutrino decays with line-intensity mapping* - invited seminar in the Cosmic Physics Center (CPC) at Fermilab - May 2021.
- *The trouble on H_0 (and beyond)* - invited seminar at the Kavli Institute for Cosmological Physics, University of Chicago - April 2021.
- *The trouble on H_0 : reloaded* - invited talk to the “theoretical particle physics seminars” at Stanford University - April 2021.
- *Detecting dark matter decays with line-intensity mapping* - contributed lighting talk to “Latin American Workshop on Observational Cosmology” ICTP SAIFR - December 2020.
- *Cosmology on the Edge of Λ -Cold Dark Matter* - Invited talk at “XIV SEA Scientific Meeting” - Remotely, Spain - July 2020.
- Member of the panel for the discussion session, day 5 - H_0 2020 - Remote meeting - June 2020.
- *The take on cosmology and the Hubble constant tension using Line Intensity Mapping observations* - Invited talk at “Fundamental Theory” seminar at the Institute for Gravitation & Cosmology, Penn State University, USA - February 2020.
- *Exploiting Line-Intensity Mapping for Cosmology* - Invited talk at “2019 GSFC-JHU Interaction Day” - Johns Hopkins University, Baltimore, USA - October 2019.
- *The Cosmic Expansion History from Line-Intensity Mapping* - Contributed talk at “Cosmic Controversies” - Kavli Institute for Cosmological Physics at the University of Chicago, USA - October 2019.
- *The next frontier: clustering at ultra-large scales* - Invited talk at “Concordances and challenges in cosmology after Planck” - Sexten Center for Astrophysics, Italy - February 2019.
- *Synergies and fundamental physics from the large-scale structure* - California Institute of Technology, USA - February 2019.
- *Synergies and fundamental physics from the large-scale structure* - University of California in Santa Cruz, USA - January 2019.
- *Synergies and fundamental physics from the large-scale structure* - Invited talk at Lawrence Berkeley National Laboratory, USA - January 2019.
- *Synergies and fundamental physics from the large-scale structure* - Center for Astrophysics, Harvard University, USA - January 2019.
- *Synergies and fundamental physics from the large-scale structure* - Harvard University, USA - January 2019.
- *Cosmology from the Dark Ages* - Institute of Theoretical Physics (IFT), Spain - October 2018.

- *Cosmology with 21 cm Intensity Mapping from the Dark Ages* - Invited talk at “From Dark Energy to Bright Synergies ” - Sexten Center for Astrophysics, Italy - July 2018.
- *Signatures of primordial black holes as seeds of supermassive black holes* - Contributed talk at “XIII SEA Scientific meeting” - Salamanca, Spain - July 2018.
- *Measuring Galaxy Clustering at Ultra Large Scales* - Invited talk at “Unsolved Problems in Astrophysics and Cosmology” - Eötvös University, Hungary - July 2018.
- *Signatures of primordial black holes as seeds of supermassive black holes* - Contributed talk at “Cosmology2018 Cosmological Applications from First Stars, Reionization and 21-cm Observations” - Institute of Cosmos Sciences (ICC-UB), Spain - June 2018.
- *Using High Redshift Intensity Mapping for Cosmology* - Invited talk at “Venice Cosmology Workshop 2018: The Island” - Venice International University, Italy - June 2018.
- *Signatures of primordial black holes as seeds of supermassive black holes* - Center for Computational Astrophysics, Flatiron Institute, USA - May 2018.
- *Signatures of primordial black holes as seeds of supermassive black holes* - Center for Cosmology and Particle Physics, New York University, USA - April 2018.
- *Cosmological implications of primordial black holes* - Coffee talk. Institute for Astronomy, Royal Observatory of Edinburgh, UK - October 2017.
- *Diving into precision cosmology and the role of cosmic magnification* - Invited talk at “ICCUB Winter Meeting 2017” - Institute of Cosmos Sciences, Spain - February 2017.
- *The trouble with H_0 and the low redshift standard ruler* - Astrophysics group journal club. Imperial College London, UK - November 2016.
- *Parameter splitting in dark energy: is dark energy the same in the background and in the cosmic structures* - Contributed talk at “XII SEA Scientific meeting” - Bilbao, Spain - July 2016.
- *Digging into the tensions of Λ CDM* - Center for Astrophysics, Harvard University, USA - May 2016.
- *Background expansion vs. growth of structure: consistency check* - Columbia University, USA - April 2016.

POSTERS

- *The trouble with H_0* - Cosmology school in the Canary Islands - Fuerteventura, Spain, September 2017.
- *Parameter splitting in dark energy: is dark energy the same in the background and in the cosmic structures* - Meeting on fundamental cosmology - Barcelona, Spain, June 2016.