

GUIDO D'AMICO

CURRICULUM VITÆ

PERSONAL INFO

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Nationality Italian

ACADEMIC POSITIONS

CERN, Geneva, Switzerland 2015-2018
Theory Division
COFUND Fellow

New York University, New York, USA 2010-2015
Center for Cosmology and Particle Physics,
James Arthur Fellow

EDUCATION

SISSA, Trieste, Italy 2006-2010
Ph.D. in Astroparticle Physics, advisor prof. Paolo Creminelli
Thesis: "Dark Energy and non-Gaussianity through the Large Scale Structure"

Scuola Normale Superiore, Pisa, Italy 2004-2006
License diploma in Physics

University of Pisa, Pisa, Italy 2004-2006
M.Sc. in Theoretical Physics, final degree 110/110 *cum laude*
Master Thesis: "Non-Gaussianity of Large Scale CMB Anisotropies: a non perturbative Approach", advisor prof. Sabino Matarrese

University of L'Aquila, L'Aquila, Italy 2001-2004
B.Sc. in Physics, final degree 110/110 *cum laude*

Liceo Classico G. B. Vico, Chieti, Italy
High School in Classical Studies, final degree 100/100

1996-2001

HONORS AND AWARDS

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| <i>COFUND Fellowship</i> , CERN | 2015-2018 |
| <i>James Arthur Fellowship</i> , Center for Cosmology and Particle Physics, New York University | 2010-2013 |
| <i>Undergraduate academic fellowship</i> , Scuola Normale Superiore, Pisa | 2004-2006 |

PROFESSIONAL AND ACADEMIC ACTIVITIES

Referee for *Classical and Quantum Gravity*, *Computer Methods and Programs in Biomedicine*, *European Physics Journal C*, *International Journal of Modern Physics*, *Journal of Cosmology and Astroparticle Physics*, *Journal of High Energy Physics*, *Monthly Notices of the Royal Astronomical Society*, *Nature Scientific Reports*, *Physics of the Dark Universe*, *Physics Letters B*, *Physical Review D*, *Physical Review Letters*

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| Co-organizer of the 21cm@CERN workshop | 2018 |
| Co-organizer of the CosmoCoffee Seminars at CERN | 2017-2018 |
| Organizer of the High Energy Seminars at NYU | 2012-2013 |
| Co-organizer of the Astroparticle Lunch Seminars at SISSA | 2009-2010 |
| Student collaboration for creation and management of the SISSA Astroparticle Physics website | 2008-2010 |
| Student collaboration for computer management of the SISSA Astrophysics Sector | 2007-2008 |

TEACHING

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| Lectures in Cosmology at the Summer School on General Relativity in Petnica, Serbia | JUL 2016 |
| Co-supervision of 3 graduate students | |

OUTREACH

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| Panelist at the public discussion “What’s time?” organized by Zurich Salon | SEP 2017 |
| Volunteered as a guide in a public scientific exhibition by the University of Pisa | 2005 |

SKILLS

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| Mac OS X, Linux, Windows | OS |
| Expertise in Mathematica, Python, working knowledge of FORTRAN, C, C++, HTML, CSS, \LaTeX | PROGRAMMING |
| Italian (mother tongue), English (fluent), French (proficient) | LANGUAGES |

SELECTED TALKS AND CONFERENCES

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| <i>53rd Rencontres de Moriond</i> , La Thuile, Italy | MAR 2018 |
| <i>Probing fundamental physics with CMB spectral distortions</i> , CERN, Switzerland | MAR 2018 |
| <i>Swiss Cosmology Days</i> , CERN, Switzerland | FEB 2018 |
| <i>Informal Workshop on Cosmology and Astrophysics</i> at the ICTP-SAIFR, Sao Paulo, Brazil | OCT 2017 |
| <i>9th MATHEMATICAL PHYSICS MEETING</i> in Belgrade, Serbia | SEP 2017 |
| <i>Understanding Cosmological Observations</i> in Benasque, Spain | AUG 2017 |
| Gordon Research Seminar and Conference at HKUST, Hong Kong | JUN 2017 |
| Seminar at University of Padova | JUN 2017 |
| Seminar at CENTRA, Lisbon University | NOV 2016 |
| Seminar at Nottingham University | NOV 2016 |
| Cambridge University Cosmology Lunch | NOV 2016 |
| FANCY workshop at CP3, Odense, Denmark | OCT 2016 |
| Utrecht Cosmology Symposium | JUN 2016 |
| THC meeting at Amsterdam University | JUN 2016 |
| <i>51st Rencontres de Moriond</i> , La Thuile, Italy | MAR 2016 |
| Seminar at Scuola Normale Superiore | FEB 2016 |
| <i>From String Theory to Particle Physics and Cosmology, and Back</i> , GGI, Florence | NOV 2015 |
| Theory Seminar at University of Geneva | OCT 2015 |
| <i>Primordial Physics</i> at Aspen Center for Physics | JUN 2015 |
| <i>Higher Spins and Holography</i> at Istanbul University | JUN 2015 |

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| Astrophysics Seminar at UC Davis | MAY 2015 |
| String Theory Seminar at Brandeis University | FEB 2015 |
| Cosmology Lunch at Princeton University | OCT 2014 |
| Seminar at CITA | OCT 2014 |
| Journal Club at the CEA/Saclay | APR 2014 |
| Weinberg's Theory Group Seminar at UT Austin | FEB 2014 |
| <i>Inflation after Planck</i> at DESY, Hamburg | JAN 2014 |
| Tufts/MIT Cosmology Seminar at Tufts University | OCT 2013 |
| <i>New Challenges for Early Universe Cosmologists</i> at Lorentz Center, Leiden | AUG 2013 |
| <i>New Light in Cosmology from the CMB</i> at ICTP, Trieste | JULY 2013 |
| <i>Mining the Cosmic Frontier in the Planck Era</i> at UC Davis | MAY 2013 |
| Seminar at University of Pennsylvania | MAR 2013 |
| ISCAP seminar at Columbia University | FEB 2013 |
| <i>Gravity and Cosmology 2012</i> in Kyoto, Japan | DEC 2012 |
| Particle Physics Seminar at UC Davis | OCT 2012 |
| <i>Quarks 2012</i> in Yaroslavl', Russia | JUN 2012 |
| <i>Non-Gaussianity as a Window to the Primordial Universe</i> at Aspen Center for Physics | MAY 2012 |
| Cosmology Lunch at Princeton University | APR 2012 |
| Theory seminar at UMass Amherst | DEC 2011 |
| <i>Pre-Planckian Inflation</i> at University of Minnesota | OCT 2011 |
| <i>Infrared Modifications of Gravity</i> at ICTP, Trieste | SEP 2011 |
| Theory seminar at UC Davis | MAY 2011 |
| <i>Cosmological Non-Gaussianity: Observations Confront Theory</i> at University of Michigan | MAY 2011 |
| <i>PONT 2011</i> in Avignon, France | APR 2011 |
| <i>Galileon workshop</i> at University of Pennsylvania | APR 2011 |
| Theory seminar at Syracuse University | APR 2011 |
| Theory seminar at University of Pennsylvania | MAR 2011 |
| ISCAP seminar at Columbia University | MAR 2011 |

PUBLICATIONS

- [1] G. D'Amico, T. Hamill and N. Kaloper, "Neutrino Masses from Outer Space," arXiv:1804.01542 [hep-ph].
- [2] G. D'Amico, P. Panci and A. Strumia, "Bounds on Dark Matter annihilations from 21 cm data," arXiv:1803.03629 [astro-ph.CO].
- [3] G. D'Amico, N. Kaloper and A. Lawrence, "Monodromy inflation at strong coupling: 4π in the sky," arXiv:1709.07014 [hep-th].

- [4] G. D’Amico, P. Panci, A. Lupi, S. Bovino and J. Silk, “Massive Black Holes from Dissipative Dark Matter,” *Mon. Not. Roy. Astron. Soc.* **473** (2018) no.1, 328 [arXiv:1707.03419 [astro-ph.CO]].
- [5] J. Delabrouille *et al.* [CORE Collaboration], “Exploring Cosmic Origins with CORE: Survey requirements and mission design,” *JCAP* **1804** (2018) no.04, 014 [arXiv:1706.04516 [astro-ph.IM]].
- [6] G. D’Amico, N. Kaloper, A. Padilla, D. Stefanyshyn, A. Westphal and G. Zahariade, “An Etude on Global Vacuum Energy Sequester,” *JHEP* **1709** (2017) 074 [arXiv:1705.08950 [hep-th]].
- [7] G. D’Amico, M. Nardecchia, P. Panci, F. Sannino, A. Strumia, R. Torre and A. Urbano, “Flavour anomalies after the R_{K^*} measurement,” *JHEP* **1709** (2017) 010 [arXiv:1704.05438 [hep-ph]].
- [8] F. Finelli *et al.* [CORE Collaboration], “Exploring Cosmic Origins with CORE: Inflation,” *JCAP* **1804** (2018) no.04, 016 [arXiv:1612.08270 [astro-ph.CO]].
- [9] G. D’Amico, R. Rabadan and M. Kleban, “A Random Categorization Model for Hierarchical Taxonomies,” *Scientific Reports* 2017 7(1):17051 [arXiv:1611.03890 [physics.soc-ph]]
- [10] G. D’Amico, Z. Huang, M. Mancarella and F. Vernizzi, “Weakening Gravity on Redshift-Survey Scales with Kinetic Matter Mixing,” *JCAP* **1702** (2017) 014 [arXiv:1609.01272 [astro-ph.CO]].
- [11] G. D’Amico, T. Hamill and N. Kaloper, “Quantum Field Theory of Interacting Dark Matter/Dark Energy: Dark Monodromies”, *Phys. Rev. D* **94** (2016) no.10, 103526 [arXiv:1605.00996 [hep-th]].
- [12] G. D’Amico and N. Kaloper, “Anisotropies in nonthermal distortions of cosmic light from photon-axion conversion”, *Phys. Rev. D* **91** (2015) no.8, 085015 [arXiv:1501.01642 [astro-ph.CO]].
- [13] G. D’Amico, R. Gobbetti, M. Kleban and M. Schillo, “D-brane scattering and annihilation”, *JHEP* **1501** (2015) 050 [arXiv:1408.2540 [hep-th]].
- [14] G. D’Amico and M. Kleban, “Non-Gaussianity after BICEP2”, *Phys. Rev. Lett.* **113** (2014) 081301 [arXiv:1404.6478 [astro-ph.CO]].
- [15] G. D’Amico, R. Gobbetti, M. Kleban and M. Schillo, “Large-scale anomalies from primordial dissipation”, *JCAP* **1311** (2013) 013 [arXiv:1306.6872 [astro-ph.CO]].
- [16] G. D’Amico, G. Gabadadze, L. Hui and D. Pirtskhalava, “On Cosmological Perturbations of Quasidilaton”, *Class. Quant. Grav.* **30**, 184005 (2013) [arXiv:1304.0723 [hep-th]].

- [17] G. D’Amico, R. Gobbetti, M. Kleban and M. Schillo, “Unwinding Inflation”, JCAP **1303** (2013) 004 [arXiv:1211.4589 [hep-th]].
- [18] G. D’Amico, R. Gobbetti, M. Schillo and M. Kleban, “Inflation from Flux Cascades”, Phys. Lett. B **725** (2013) 218 [arXiv:1211.3416 [hep-th]].
- [19] G. D’Amico, G. Gabadadze, L. Hui and D. Pirtskhalava, “Quasidilaton: Theory and cosmology”, Phys. Rev. D **87** (2013) 064037 [arXiv:1206.4253 [hep-th]].
- [20] G. D’Amico, “Cosmology and perturbations in massive gravity”, Phys. Rev. D **86** (2012) 124019 [arXiv:1206.3617 [hep-th]].
- [21] G. D’Amico, C. de Rham, S. Dubovsky, G. Gabadadze, D. Pirtskhalava and A. J. Tolley, “Massive Cosmologies”, Phys. Rev. D **84** (2011) 124046 [arXiv:1108.5231 [hep-th]].
- [22] P. Creminelli, G. D’Amico, M. Musso and J. Norena, “The (not so) squeezed limit of the primordial 3-point function”, JCAP **1111** (2011) 038 [arXiv:1106.1462 [astro-ph.CO]].
- [23] G. D’Amico and E. Sefusatti, “The nonlinear power spectrum in clustering quintessence cosmologies”, JCAP **1111** (2011) 013 [arXiv:1106.0314 [astro-ph.CO]].
- [24] P. Creminelli, G. D’Amico, M. Musso, J. Norena and E. Trincherini, “Galilean symmetry in the effective theory of inflation: new shapes of non-Gaussianity”, JCAP **1102** (2011) 006 [arXiv:1011.3004 [hep-th]].
- [25] G. D’Amico, M. Musso, J. Norena and A. Paranjape, “Excursion Sets and Non-Gaussian Void Statistics”, Phys. Rev. D **83** (2011) 023521 [arXiv:1011.1229 [astro-ph.CO]].
- [26] G. D’Amico, M. Musso, J. Norena and A. Paranjape, “An Improved Calculation of the Non-Gaussian Halo Mass Function”, JCAP **1102** (2011) 001 [arXiv:1005.1203 [astro-ph.CO]].
- [27] P. Creminelli, G. D’Amico, J. Norena, L. Senatore and F. Vernizzi, “Spherical collapse in quintessence models with zero speed of sound”, JCAP **1003** (2010) 027 [arXiv:0911.2701 [astro-ph.CO]].
- [28] G. D’Amico, M. Kamionkowski and K. Sigurdson, “Dark Matter Astrophysics”, arXiv:0907.1912 [astro-ph.CO].
- [29] L. Boubekur, P. Creminelli, G. D’Amico, J. Norena and F. Vernizzi, “Sachs-Wolfe at second order: the CMB bispectrum on large angular scales”, JCAP **0908** (2009) 029 [arXiv:0906.0980 [astro-ph.CO]].

- [30] P. Creminelli, G. D’Amico, J. Norena and F. Vernizzi, “The Effective Theory of Quintessence: the $w < -1$ Side Unveiled”, JCAP **0902** (2009) 018 [arXiv:0811.0827 [astro-ph]].
- [31] G. D’Amico, N. Bartolo, S. Matarrese and A. Riotto, “CMB temperature anisotropies from third order gravitational perturbations”, JCAP **0801** (2008) 005 [arXiv:0707.2894 [astro-ph]].
- [32] E. R. Siegel, G. D’Amico, E. Di Napoli, L. Fu, M. P. Hertzberg, N. T. T. Huong, F. Palorini and A. Sellerholm, “Dark Matter on the Smallest Scales”, astro-ph/0611864.