

Maria Elidaiana da Silva Pereira

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Education

- **Doctor of Philosophy in Physics**
Brazilian Center for Research in Physics (CBPF) **Rio de Janeiro, Brazil**
Mar 2013 – Sep 2017
- **Bachelor of Education in Physics**
Rio de Janeiro State University (UERJ) **Rio de Janeiro, Brazil**
Mar 2011 – Jul 2015
- **Master of Science in Physics**
CBPF **Rio de Janeiro, Brazil**
Mar 2010 – Dec 2012
- **Bachelor of Science in Physics**
UERJ **Rio de Janeiro, Brazil**
Mar 2005 – Feb 2010

Employment

- **Post-doctoral scientific staff**
Universität Hamburg **Hamburg, DE**
Aug 2021 – Current
- **Research Fellow**
University of Michigan **Ann Arbor, USA**
Sep 2020 – Jul 2021
- **Postdoctoral Fellow**
Brandeis University **Waltham, USA**
Oct 2017 – Aug 2020

Awards

- **Dark Energy Survey Builder Status**
DES (for 2+ FTE years of infrastructure work) **Since July 2020**
- **PhD Thesis Award, Honorable Mention**
CBPF **Dec 2017**
- **PhD Fellowship**
CNPq (Brazilian federal government funding agency for research) **Mar 2013 – Feb 2017**
- **Masters Fellowship**
CAPES (Brazilian federal government agency for higher education) **Mar 2010 – Feb 2012**
- **Undergraduate Research Fellowship**
CNPq **Aug 2006 – Jan 2010**

Grants

NSF Support PHY-1607611

- To attend the workshop "Astrophysics in the LIGO/Virgo Era" at the Aspen Center for Physics Aug – Sep 2019

MMWSS Scholarship

- Kenan Institute of Engineering, Technology and Science (Maria Mitchell Women in Science Symposium) Oct 2018

IUPAP Women in Physics Travel Grant Program

- International Union of Pure and Applied Physics Aug 2016

GR21 Travel Grant

- Columbia University (21st International Conference on General Relativity and Gravitation) Jul 2016

Astro Hack Week Travel Grant

- LSST Corporation and GitHub Inc. Sep – Oct 2015

Les Houches School of Physics Fellowship

- Les Houches School of Physics (Post-Planck Cosmology) Jul – Aug 2013

Approved Proposals

SOAR/Goodman (ID:2020A-0371) - NOAO observing time

- SOAR Spectroscopy of LIGO/Virgo O3 Transients (PI: Charles Kilpatrick) Dec 2019

SOAR/Goodman (ID:SO2020A-022) - 20h

- SOAR Spectroscopy of LIGO/Virgo O3 Transients (PI: Martin Makler) Dec 2019

CTIO/DECam (ID:2019B-0372)

- The DECam Search & Discovery Program for Optical Signatures of Gravitational Wave Events (DESGW) (PI: Marcelle Soares-Santos) Apr 2019

SOAR/Goodman (ID:SO2019A-021 - Brazilian observing time)

- SOAR Spectroscopy of LIGO/Virgo O3 Transients (PI: Martin Makler) Dec 2018

SOAR/Goodman (ID:2019A-0307 - NOAO observing time)

- SOAR Spectroscopy of LIGO/Virgo O3 Transients (PI: Douglas Tucker) Dec 2018

CTIO/DECam (ID:2018A-0914) - 25.5h

- Blanco i-band Kilo-degree Survey - Blink (PI: Martin Makler) Nov 2017

SOAR/SOI (ID:CF2010B-009) - 7h

- SOAR Gravitational Arc Survey - SOGRAS (PI: Martin Makler) Apr 2010

Conference Talks

Cluster Cosmology with the Dark Energy Survey Year 3 Data

- AAS Virtual Meeting, Invited Virtual, USA Jan 2021

<ul style="list-style-type: none"> ○ Cosmic Controversies in Galaxy Clusters: Weak Lensing Mass Calibration <i>APS Virtual April Meeting</i> 	Virtual, USA Apr 2020
<ul style="list-style-type: none"> ○ Weak-Lensing Mass Calibration of μ_* at High Redshifts with the Dark Energy Survey Year 1 <i>Meeting of the Division of Particles & Fields of the American Physical Society, Northeastern University</i> 	Boston, USA Jul 2019
<ul style="list-style-type: none"> ○ Density Profiles of Galaxy Clusters in the CFHT Stripe 82 Survey from Weak Gravitational Lensing <i>GR21, Columbia University</i> 	New York, USA July 2016
<ul style="list-style-type: none"> ○ Weak lensing Signal of Voronoi-Selected Galaxy Clusters [un]detected by Red-sequence Algorithm <i>GrACo III, CBPF</i> 	Rio de Janeiro, Brazil Apr 2016
<ul style="list-style-type: none"> ○ Measuring Galaxy Morphologies in the CFHT/MegaCam Stripe-82 Survey <i>VI IWARA, CBPF</i> 	Rio de Janeiro, Brazil Oct 2013

Invited Colloquia and Seminars

<ul style="list-style-type: none"> ○ Cluster Cosmology with the Dark Energy Survey Year 3 Data <i>UCL - Extragalactic/Cosmology Seminar, virtual</i> 	May 2021
<ul style="list-style-type: none"> ○ Cluster Cosmology with the Dark Energy Survey Year 3 Data <i>Max Planck Institute for Astrophysics - Cosmology Seminar, virtual</i> 	Apr 2021
<ul style="list-style-type: none"> ○ Weighing and Counting Giants in the Sky <i>University of Michigan - Saturday Morning Physics lecture series</i> 	Feb 2021
<ul style="list-style-type: none"> ○ Pesando gigantes no céu: Cosmologia com aglomerados de galáxias (in Portuguese) <i>Astrocientistas: I Encontro Brasileiro de Meninas e Mulheres da Astrofísica, Gravitação e Cosmologia – virtual seminar</i> 	Feb 2021
<ul style="list-style-type: none"> ○ Pesando Gigantes Céu: uma Controvérsia Cósmica? (in Portuguese) <i>URCA (Física Online/YouTube) - virtual seminar</i> 	Aug 2020
<ul style="list-style-type: none"> ○ Cosmic Controversies in Galaxy Clusters: Weak Lensing Mass Calibration <i>MIT - brown bag seminar</i> 	Nov 2019
<ul style="list-style-type: none"> ○ Galaxy cluster mass measurements in the Dark Energy Survey: The case for a stellar-mass based mass proxy <i>CBPF - seminar</i> 	Aug 2019
<ul style="list-style-type: none"> ○ Weighing galaxy clusters in wide area imaging surveys <i>Fermilab - seminar</i> 	Feb 2018

- **Weighing galaxy clusters on Stripe 82 through weak gravitational lensing**
UFRJ - seminar Sep 2017

Responsibilities and Leadership

- **Developing the Snowmass 2021 Survey**
Snowmass Early Career Survey Initiative Jul 2020 – current
- **Co-chair of the Cluster Cosmology and Lensing Subgroup**
Dark Energy Survey Jun 2020 – current
- **Co-leader of the Survey Initiative**
Snowmass Early Career Jul – Sep 2020
- **Organizer of the Dark Universe Seminars**
Brandeis University Jan 2018 – Feb 2020
- **Organizer of the Meeting to Celebrate the "International Day of Women and Girls in Science" at CBPF**
CBPF Feb 2017
- **Organizer of the "Survey of Scientific Working Environment in the Brazilian Astronomical Community" - LACAN**
CBPF May 2015 – Jun 2016
- **Member of the Graduate Student Association**
CBPF Sep 2013 – Sep 2015

Other Professional Activities

Peer Review

- **Astronomy & Astrophysics**
Reviewer Since Oct 2020

Teaching

- **Continuing Education Program for High School Teachers**
CBPF Jul 2015
Set up and present Modern Physics experiments for teachers of public high schools.

Outreach

- **Science Communication Fellow**
University of Michigan Museum of Natural History Sep 2020 – current
- **Contributor of a Brazilian Science Communication Blog**
[Blog Cientistas Feministas](#) Mar 2020 - current
Writing Sci-Comm articles about Astrophysics and Cosmology.

- **Cultural Tourism in the Imperial district of São Cristóvão**
Museum of Astronomy and Related Sciences (MAST) May 2015, 2017
 An annual exhibition of Basic Physics experiments for the general public.
- **Brazilian National Science and Technology Week**
Itinerant event Oct 2013, 2014, 2016
 Set up and present Basic Physics experiments to the general public during a week.

Technical Skills

- **Programming Languages:** Python, Fortran95 and C.
- **Open Source Coding:** Jupyter Notebooks, Docker, Git and Anaconda.
- **Astronomy and Cosmology Codes:** TXpipe, xpipe, TreeCorr, WLpipe, Cosmofit, emcee, xshear, PSFEx, SExtractor, Imcat and Automask.
- **Languages:** Portuguese (Native Speaker), English (Fluent) and German (B1).

Affiliations

- **The Cosmic Explorer Consortium**
Membership Oct 2020 – Current
- **LSST Dark Energy Science Collaboration (LSST-DESC)**
DESC Membership Jan 2018 – Current
- **Dark Energy Survey**
Collaboration Builder (Permanent Data Access) Oct 2017 – Current
- **American Physical Society**
ECS Membership June 2017 – Current

Selected Publications

For full list: <https://orcid.org/0000-0002-7131-7684>

- **13)** C. To, E. Krause, E. Rozo, H. Wu, D. Gruen, R. H. Wechsler, T. F. Eifler, E. S. Rykoff, M. Costanzi, M. R. Becker, G. M. Bernstein, J. Blazek, S. Bocquet, S. L. Bridle, R. Cawthon, A. Choi, M. Crocce, C. Davis, J. DeRose, A. Drlica-Wagner, J. Elvin-Poole, X. Fang, A. Farahi, O. Friedrich, M. Gatti, E. Gaztanaga, T. Giannantonio, W. G. Hartley, B. Hoyle and M. Jarvis, N. MacCrann, T. McClintock, V. Miranda, **M. E. S. Pereira** et al. *Dark Energy Survey Year 1 Results: Cosmological Constraints from Cluster Abundances, Weak Lensing, and Galaxy Correlations*. Phys. Rev. Lett. 126, 141301, April 2021. [[arXiv](#) | [ADS](#)]
- **12)** **M. E. S. Pereira** et al. μ_* Masses: Weak Lensing Calibration of the Dark Energy Survey Year 1 redMaPPer Clusters using Stellar Masses. MNRAS, 498: 5450-5467, Sep 2020. [[arXiv](#) | [ADS](#)]
- **11)** A. Palmese, J. de Vicente, **M. E. S. Pereira** et al. *A statistical standard siren measurement of the Hubble constant from the LIGO/Virgo gravitational wave compact object merger GW190814 and Dark Energy Survey galaxies*. ApJL, 900, 2-L33, Sep 2020. [[arXiv](#) | [ADS](#)]

- **10)** A. Palmese, J. Annis, J. C. Burgad, H. Lin, **M. E. S. Pereira** and the DES Collaboration. *Stellar mass as a galaxy cluster mass proxy: application to the Dark Energy Survey redMaPPer clusters*. MNRAS, 493: 4591-4606, Apr 2020. [[arXiv](#) | [ADS](#)]
- **9)** The DES Collaboration, the LIGO Scientific Collaboration, the Virgo Collaboration, M. Soares-Santos, A. Palmese, W. Hartley, J. Annis, J. Garcia-Bellido, O. Lahav, Z. Doctor, H. Lin, M. Fishbach, **M. E. S. Pereira** and others. *First measurement of the Hubble constant from a dark standard siren using the Dark Energy Survey galaxies and the LIGO/Virgo binary-black-hole merger GW170814*. ApJL, 876, 1-L7, Apr 2019. [[arXiv](#) | [ADS](#)]
- **8)** J. Y. H. Soo , B. Moraes, B. Joachimi, W. Hartley, O. Lahav, A. Charbonnier, M. Makler, **M. E. S. Pereira**, J. Comparat, T. Erben, A. Leauthaud, H. Shan and L. Van Waerbeke. *Morpho-z: improving photometric redshifts with galaxy morphology*. MNRAS 475: 3616-3632, Apr 2018. [[arXiv](#) | [ADS](#)]
- **7)** **M. E. S. Pereira**, M. Soares-Santos, M. Makler, J. Annis, G. B. Caminha, T. Erben, H. Lin, B. Moraes, A. Palmese, H. Shan, A. Z. Vitorelli and B. Welch. *Weak-lensing calibration of a stellar mass-based mass proxy for redMaPPer and Voronoi Tessellation clusters in SDSS Stripe 82*. MNRAS, 474: 1361-1372, Feb 2018. [[arXiv](#) | [ADS](#)]
- **6)** A. Z. Vitorelli, E. S. Cypriano, M. Makler, **M. E. S. Pereira**, T. Erben and B. Moraes. *On mass concentrations and magnitude gaps of galaxy systems in the CS82 survey*. MNRAS, 474: 866-875, Feb 2018. [[arXiv](#) | [ADS](#)]
- **5)** A. Charbonnier, M. H. Company, T. S. Gonçalves, K. Bundy, K. Menéndez-Delmestre, E. Galliano, B. Moraes, **M. E. S. Pereira**, M. Makler, T. Erben, H. Hildebrandt, H. Shan, G. B. Caminha, M. Grossi and L. Riguccini. *The abundance of compact quiescent galaxies since $z \sim 0.6$* . MNRAS, 469: 4523-4536, Aug 2017. [[arXiv](#) | [ADS](#)]
- **4)** J. Geach, Y-T. Lin, M. Makler, J-P. Kneib, N. Ross, W-H. Wang, B-C. Hsieh, A. Leauthaud, K. Bundy, H. McCracken, J. Comparat, G. Caminha, P. Hudelot, L. Lin, L. Van Waerbeke, **M. E. S. Pereira** and D. Mast. *VICS82: the VISTA-CFHT Stripe 82 near-infrared survey*. ApJ, 231: 7, Jul 2017. [[arXiv](#) | [ADS](#)]
- **3)** A. Leauthaud, S. Saito , S. Hilbert , A. Barreira, S. More, M. White, S. Alam, P. Behroozi, K. Bundy, J. Coupon, T. Erben, C. Heymans, H. Hildebrandt, R. Mandelbaum, B. Moraes, **M. E. S. Pereira**, S. A. Rodríguez-Torres and H. Shan. *Lensing is Low: Cosmology, Galaxy Formation, or New Physics?*. MNRAS, 467: 3024-3047, Feb 2017. [[arXiv](#) | [ADS](#)]
- **2)** B. Nord, E. Buckley-Geer, H. Lin, H. T. Diehl, J. Helsby, N. Kuropatkin, A. Amara, T. Collett, S. Allam, G. B. Caminha, C. De Bom, S. Desai H. Dúmet-Montoya, **M. E. S. Pereira**, and The DES Collaboration. *Observation and Confirmation of Six Strong-lensing Systems in the Dark Energy Survey Science Verification Data*. ApJ, 827: 51, Aug 2016. [[arXiv](#) | [ADS](#)]
- **1)** C. Furlanetto, B. X. Santiago, M. Makler, E. S. Cypriano, G. B. Caminha, **M. E. S. Pereira**, A. F. Neto, J. Estrada, H. Lin, J. Hao, T. A. McKay, L. N. da Costa and M. A. G. Maia. *The SOAR Gravitational Arc Survey - I. Survey overview and photometric catalogues*. MNRAS, 432: 73-88, Jun 2013. [[arXiv](#) | [ADS](#)]