

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

- **Research Fellow**
University of Michigan **Ann Arbor, USA**
Sep 2020 – Current
- **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**
CNPq *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"> ○ Weighing Giants in the Sky - a Cosmic Controversy <i>Kent State University - colloquium (postponed due COVID-19)</i> 	Apr 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"> ○ Cosmic Controversies in Galaxy Clusters: Weak Lensing Mass Calibration <i>Federal University of Rio de Janeiro (UFRJ) - seminar</i> 	Aug 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
<ul style="list-style-type: none"> ○ Weighing galaxy clusters on Stripe 82 through weak gravitational lensing <i>UFRJ - seminar</i> 	Sep 2017

Other Talks

- **Planck SZ scaling relations for μ_***
DES Collaboration Meeting, University of Sussex
 - **Weak lensing mass calibration of the DES Y1 redMaPPer clusters using the μ_* mass proxy**
DES Collaboration Meeting, University of Pennsylvania
 - **Weak lensing calibration of μ_***
Cosmology Group Meeting, Flatiron Institute
 - **Weighing giants in the sky**
APS Local Links
 - **The μ_* mass-proxy: calibration of the weak lensing mass in DES Y1**
DES Collaboration Meeting, Unicamp
 - **Weak Lensing Mass Calibration of μ_* at High Redshifts**
DES Collaboration Meeting, TAMU
 - **Weak-lensing mass calibration of redMaPPer and Voronoi Tessellation clusters in SDSS Stripe 82**
School on Open Problems in Cosmology, ICTP-SAIFR
 - **Density profile-fitting from cluster weak lensing**
Astro Hack Week 2016, University of California
 - **Bayesian inference 4 dummies**
Astro Hack Week 2015, New York University
 - **Galaxy morphology on CS82 survey**
Post-Planck Cosmology, École de Physique des Houches

Sussex, UK
Nov 2019

Philadelphia, USA
Jun 2019

New York, USA
Mar 2019

Boston, USA
Feb 2019

Campinas, Brazil
Dec 2018

Texas, USA
May 2018

São Paulo, Brazil
Jul 2017

Berkeley, USA
Aug 2016

New York, USA
Sep 2015

Les Houches, France
Jul 2013

Responsibilities and Leadership

- **Developing the Snowmass 2021 Survey**
Snowmass Early Career Survey Initiative
 - **Co-chair of the Cluster Cosmology and Lensing Subgroup**
Dark Energy Survey
 - **Co-leader of the Survey Initiative**
Snowmass Early Career
 - **Organizer of the Dark Universe Seminars**
Brandeis University
 - **Organizer of the Meeting to Celebrate the "International Day of Women and Girls in Science" at CBPF**
CBPF

Jul 2020 – current

Jun 2020 – current

Jul – Sep 2020

Jan 2018 – Feb 2020

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.
- **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 (A2).

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

Publications

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

Refereed journal articles.....

- **20) 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](#)]
- **19) 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](#)]
- **18) 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](#)]
- **17) 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](#)]
- **16) E. J. Gonzalez, F. Rodriguez, D. G. Lambas, M. Makler, V. Mesa, S. Alonso, F. Duplancic, M. E. S. Pereira** and H. Shan. Weak lensing analysis of galaxy pairs using CS82 data. A & A, 621, A90, Nov 2018. [[arXiv](#) | [ADS](#)]
- **15) M. Chalela, E. J. Gonzalez, M. Makler, D. G. Lambas, M. E. S. Pereira, A. O'mill** and H. Shan. Compact Groups analysis using weak gravitational lensing II: CFHT Stripe82 data. MNRAS, 479: 1170-1179, Sep 2018. [[arXiv](#) | [ADS](#)]
- **14) T. H. Diehl** and the DES Collaboration. The Dark Energy Survey and Operations: Years 4 and 5. Jul 2018. [[inSPIRE HEP](#) | [Fermilab Library Server](#)]
- **13) A. Niemiec, E. Jullo, A. D. Montero-Dorta, F. Prada, S. Rodriguez-Torres, E. Perez, A. Klypin, T. Erben, M. Makler, B. Moraes, M. E. S. Pereira** and H. Shan. Probing galaxy assembly bias with LRG weak lensing observations. MNRAS, 477: L1-L5, Jun 2018. [[arXiv](#) | [ADS](#)]
- **12) C. Wang, R. Li, L. Gao, H. Shan, J.-P. Kneib, W. Wang, G. Chen, M. Makler, M. E. S.**

- Pereira**, L. Wang, M. Maia and T. Erben. *Do satellite galaxies trace matter in galaxy clusters?* MNRAS, 475: 4020-4026, Apr 2018. [[arXiv](#) | [ADS](#)]
- **11)** 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](#)]
 - **10)** **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](#)]
 - **9)** 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](#)]
 - **8)** A. Niemic, E. Jullo, M. Limousin, C. Giocoli, T. Erben, H. Hildebrandt, J-P. Kneib, A. Leauthaud, M. Makler, B. Moraes, **M. E. S. Pereira**, H. Shan, E. Rozo, E. Rykoff and L. Van Waerbeke. *Stellar-to-halo mass relation of cluster galaxies*. MNRAS, 471: 1153-1166, Oct 2017. [[arXiv](#) | [ADS](#)]
 - **7)** 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](#)]
 - **6)** 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](#)]
 - **5)** H. Shan, J-P. Kneib, R. Li, J. Comparat, T. Erben, M. Makler, B. Moraes, L. Van Waerbeke, J. E. Taylor, A. Charbonnier and **M. E. S. Pereira**. *The Mass-Concentration Relation and the Stellar-to-Halo Mass Ratio in the CFHT Stripe 82 Survey*. ApJ, 840: 104, May 2017. [[arXiv](#) | [ADS](#)]
 - **4)** 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](#)]
 - **3)** 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](#)]
 - **2)** J. Comparat, E. Jullo, J.-P. Kneib, C. Schimd, H. Shan, T. Erben, O. Ilbert, J. Brownstein, A. Ealet, S. Escoffier, B. Moraes, N. Mostek J. A. Newman, **M. E. S. Pereira**, F. Prada, D. J. Schlegel, D. P. Schneider, and C. H. Brandt. *Stochastic bias of colour-selected BAO tracers by joint clustering-weak lensing analysis*. MNRAS, 433: 1146-1160, Aug 2013. [[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](#)]

Submitted articles.....

- E. J. Gonzalez, F. Rodriguez, M. Merchán, D. García Lambas, M. Makler, **M. E. S. Pereira**, B. Moraes and H. Shan. *On the weak lensing masses of a new sample of galaxy groups.* Submitted to A&A, Nov 2020.
- 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.* Submitted to PRL, Oct 2020. [[arXiv](#) | [ADS](#)]
- C. To, E. Krause, E. Rozo, H. Wu, D. Gruen, J. DeRose, E. S. Rykoff, R. H. Wechsler, M. R. Becker, M. Costanzi, T. Eifler, **M. E. S. Pereira** and N. Kokron. *Combination of cluster number counts and two-point correlations: Validation on Mock Dark Energy Survey.* Submitted to MNRAS, Sep 2020. [[arXiv](#) | [ADS](#)]
- E. J. Gonzalez, M. Makler, D. Garcia Lambas, M. Chalela, **M. E. S. Pereira**, L. Van Waerbeke, H. Shan and T. Erben. *Measuring the surface mass density ellipticity of redMaPPer galaxy clusters using weak-lensing.* Submitted to MNRAS, Jun 2020. [[arXiv](#) | [ADS](#)]