

Maria Elidaiana da Silva Pereira

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Education

- **Doctor of Philosophy in Physics** **Rio de Janeiro, Brazil**
Brazilian Center for Physics Research (CBPF)
Mar 2013 – Sep 2017
Weighing Galaxy Clusters on Stripe 82 through Weak Gravitational Lensing
- **Bachelor of Education in Physics** **Rio de Janeiro, Brazil**
Rio de Janeiro State University (UERJ)
Mar 2011 – Jul 2015
- **Master of Science in Physics** **Rio de Janeiro, Brazil**
CBPF
Mar 2010 – Dec 2012
- **Bachelor of Science in Physics** **Rio de Janeiro, Brazil**
UERJ
Mar 2005 – Dec 2009

Employment

- **Postdoctoral Fellow**
Brandeis University (Supervisor: Dr. Marcelle Soares-Santos)
Oct 2017 – Current

Awards and grants

- **PhD Thesis Award, Honorable Mention**
CBPF
Dec 2017
- **Ph.D. fellowship**
CNPq (Brazilian federal government funding agency for research)
Mar 2013 – Feb 2017
- **IUPAP Women in Physics Travel Grant Program**
International Union of Pure and Applied Physics
Aug 2016
- **Masters fellowship**
CNPq
Mar 2010 – Feb 2012
- **Undergraduate research fellowship**
CNPq
Aug 2006 – Jan 2010

Approved proposals

- **DECam/CT-4m (ID:2018A-0914)**
Blanco i-band Kilo-degree Survey - Blink (PI: Dr. Martin Makler)
Nov 2017

Conference talks

- **Density profiles of galaxy clusters in the CFHT Stripe 82 survey**
from weak gravitational lensing
GR21, Columbia University

New York, USA
July 2016
- **Weak lensing signal of Voronoi-selected galaxy clusters**
[un]detected by red-sequence algorithm
GrACo III, CBPF

Rio de Janeiro, Brazil
Apr 2016
- **Measuring galaxy morphologies in the CFHT Stripe-82 Survey**
ICRA10, CBPF

Rio de Janeiro, Brazil
Apr 2014
- **Measuring galaxy morphologies in the CFHT/MegaCam Stripe-82 Survey**
VI IWARA, CBPF

Rio de Janeiro, Brazil
Oct 2013
- **Distribution of galaxy properties in SOGRAS**
SOAR Gravitational Arc Survey Workshop, CBPF

Rio de Janeiro, Brazil
Nov 2012

Colloquia and seminars

- **Weighing galaxy clusters in wide area imaging surveys**
Fermilab

Feb 2018
- **Weighing galaxy clusters on Stripe 82 through weak gravitational lensing**
Federal University of Rio de Janeiro (UFRJ)

Sep 2017

Other talks

- **Weak-lensing mass calibration of redMaPPer and Voronoi Tessellation clusters in SDSS Stripe 82**
School on Open Problems in Cosmology, ICTP-SAIFR

São Paulo, Brazil
Jul 2017
- **Density profile-fitting from cluster weak lensing**
Astro Hack Week 2016, University of California

Berkeley, USA
Aug 2016
- **Bayesian inference 4 dummies**
Astro Hack Week 2015, New York University

New York, USA
Sep 2015
- **Galaxy morphology on CS82 survey**
Post-Planck Cosmology, École de Physique des Houches

Les Houches, France
Jul 2013
- **From images to the weak lensing signal**
II National Meeting of Postgraduate in Physics, CBPF

Rio de Janeiro, Brazil
Aug 2012

Responsibilities and leadership

- **Organizer of the dark energy/dark matter seminars**
Brandeis University

Since Jan 2018

- Member of the graduate student association
CBPF

Sep 2013 – Sep 2015

Other professional activities

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.....

- 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:**

Linux ●●●○○ Latex ●●●○○ Python ●●●●○
Mathematica ●○○○○ C ●●○○○ R ●○○○○

- Open Source Coding:** During the development of my gravitational lensing analysis I worked with **Jupyter notebooks** and **Git** for coding. To control my libraries I have been using **Anaconda**. I also have experience in the masking of wide-field imaging with **Automask** (J. P. Dietrich, T. Erben) from THELI, detection and shape measurements of sources with **SExtractor** and **PSFex** (E. Bertin), measurements of stacked clusters E and B modes with **xshear** (E. Sheldon) and profile-fitting by using MCMC algorithms and libraries such as **emcee**.

- Languages:**

Portuguese Native speaker

English Speaking ●●●●○ Reading ●●●●● Listening ●●●●● Writing ●●●○○

German Beginner level

Affiliations

- LSST Dark Energy Science Collaboration (LSST DESC)**

- DESC membership

Jan 2018 – Current

- Dark Energy Survey**

- Collaboration membership

Oct 2017 – Current

- American Physical Society**

- ECS membership

June 2017 – Current

Publications

Refereed journal articles.....

- **14)** 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*. Accepted for publication at MNRAS, Jun 2018. [[arXiv](#) | [ADS](#)]
- **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. Niemiec, 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](#)]