

# Maria Elidaiana da Silva Pereira

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## Education

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- **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

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

## Awards and grants

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- **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

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

## Conference talks

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- **Weak Lensing Mass Calibration of  $\mu_*$  at High Redshifts** **Texas, USA**  
*DES Collaboration Meeting, TAMU* *May 2018*
- **Density profiles of galaxy clusters in the CFHT Stripe 82 survey** **New York, USA**  
**from weak gravitational lensing**  
*GR21, Columbia University* *July 2016*
- **Weak lensing signal of Voronoi-selected galaxy clusters** **Rio de Janeiro, Brazil**  
**[un]detected by red-sequence algorithm**  
*GrACo III, CBPF* *Apr 2016*
- **Measuring galaxy morphologies in the CFHT Stripe-82 Survey** **Rio de Janeiro, Brazil**  
*ICRA10, CBPF* *Apr 2014*
- **Measuring galaxy morphologies in the CFHT/MegaCam Stripe-82 Survey** **Rio de Janeiro, Brazil**  
*VI IWARA, CBPF* *Oct 2013*

## Colloquia and seminars

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- **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

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- **Weak-lensing mass calibration of redMaPPer and Voronoi Tessellation clusters in SDSS Stripe 82** **São Paulo, Brazil**  
*School on Open Problems in Cosmology, ICTP-SAIFR* *Jul 2017*
- **Density profile-fitting from cluster weak lensing** **Berkeley, USA**  
*Astro Hack Week 2016, University of California* *Aug 2016*
- **Bayesian inference 4 dummies** **New York, USA**  
*Astro Hack Week 2015, New York University* *Sep 2015*
- **Galaxy morphology on CS82 survey** **Les Houches, France**  
*Post-Planck Cosmology, École de Physique des Houches* *Jul 2013*
- **From images to the weak lensing signal** **Rio de Janeiro, Brazil**  
*II National Meeting of Postgraduate in Physics, CBPF* *Aug 2012*

## Responsibilities and leadership

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- **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

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### 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

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- 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

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- 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

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### Refereed journal articles.....

- **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. 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](#) ]