

MARÍA BENITO

PERSONAL INFORMATION

Born on June 2nd, 1989, in Riaño, Spain.

✉ mariabenitocst@gmail.com

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EDUCATION

- 2015-Present* **Instituto de Física Teórica, Universidade Estadual Paulista, São Paulo (Brazil)**
Expected Feb. 2019 PhD
Supervisor: Prof. Dr. Fabio Iocco
Title: *The Milky Way, a Galaxy in Λ CDM*
- 2013-2014* **Universidad Autónoma de Madrid, Madrid (Spain)**
M.S. in Elementary Particles and Cosmology
Supervisors: Prof. Dr. Fabio Iocco & Dr. Miguel Pato
Title: *A Determination of the Dark Matter Density Structure in the Milky Way*
- 2007-2013* **Universidad Autónoma de Madrid, Madrid (Spain)**
Degree of Physics
- 1996-2006* **Conservatorio Profesional de Música del Nalón, Sama de Langreo (Spain)**
Studies in violin, *Grado Elemental* (4 years) - *Grado Medio* (6 years)

RESEARCH INTERESTS

Dark Matter in galaxies: galaxy kinematics and dynamics, mass modelling of galaxies, distribution of Dark Matter in the Milky Way. Dark Matter phenomenology in astrophysical environments. Galaxy formation and evolution. Alternative theories of gravity. γ -ray astronomy. Statistics.

FELLOWSHIPS & SCHOLARSHIPS

- 2015-present* CAPES (Coordenação de Aperfeiçoamento de Nível Superior) fellow at Instituto de Física Teórica, UNESP, São Paulo (Brazil).
- September 2014* Multidark Summer Student at IFT-UAM/CSIC, Madrid (Spain).
- 2011-2012* Erasmus Grant at Humboldt Universität zu Berlin (Germany).
- 2007-2008* Excellence Grant to enter University by the Comunidad de Madrid.

SCIENTIFIC VISITS

- May, June 2018* DESY, Zeuthen (Germany).
- January 2018* CIEMAT, Madrid (Spain).
- July 2017* DESY, Zeuthen (Germany).

TALKS & SEMINARS

- May 2018* **Tensions in the Λ CDM Paradigm** at Mainz Institute for Theoretical Physics (MITP), Mainz (Germany).
“Testing Modified Gravity Theories with the Milky Way”
- March 2018* **Reunião Temática Workshop** at IFT-UNESP/ICTP-SAIFR, São Paulo (Brazil).
“Status of Large Magellanic Cloud Studies with CTA”
- December 2017* Seminar at Institute for Theoretical Particle Physics and Cosmology, RWTH Aachen University, Aachen (Germany).
“An Estimate of the Dark Matter Profile in the Galactic Bulge Region”
- May 2017* **South American Dark Matter Workshop** at IFT-UNESP/ICTP-SAIFR, São Paulo (Brazil).
“An Estimate of the Dark Matter Profile in the Galactic Bulge Region”
- November 2016* **XIII Workshop on New Physics in Space** at IFT-UNESP/ICTP-SAIFR, São Paulo (Brazil).
“An Estimate of the Dark Matter Profile in the Galactic Bulge Region”
- October 2016* **III Dark Matter Day in São Paulo** at IFT-UNESP/ICTP-SAIFR, São Paulo (Brazil).
“Dark Matter Distribution in the Galactic Bulge”
- June 2016* **School on Dark Matter** at IFT-UNESP/ICTP-SAIFR, São Paulo (Brazil).
“Dark Matter Distribution in the Milky Way: a Departure from Classical Analyses”.

POSTERS

- July 2017* **IAU Symposium 334 Rediscovering our Galaxy** at Telegrafenberg, Potsdam (Germany).
“An Estimate of the Dark Matter Profile in the Galactic Bulge Region”

PUBLICATIONS

Karukes, E.V., Benito, M., Iocco, F., Trotta, R., Geringer-Sameth, A., “Milky Way Dark Matter Density Profile and its Reconstruction”, in prep.

Benito, M., Cuoco, A., Iocco, F., “Handling the Uncertainties in the Galactic Dark Matter Distribution for Particle Dark Matter Searches”, in prep.

Negrelli, C., Benito, M., Landau, S., Iocco, F., Kraiselburd, L., “Testing MOG Theory in the Milky Way”, 2018, PRD, accepted.

Iocco, F., Benito, M., “An Estimate of the DM Profile in the Galactic Bulge Region”, Phys. Dark Univ., 15:90–95, 2017.

Benito, M., Bernal, M., Bozorgnia, N., Calore, F., Iocco, F., “Particle Dark Matter Constraints: the Effect of Galactic Uncertainties”, JCAP, 1702(02):007, 2017.

PROFESSIONAL MEMBERSHIPS

- Member of the CTA collaboration (since January 2017)

TECHNICAL SKILLS

- **Data Analysis:** γ -ray data analysis with CTOOLS; DS9, CLUMPY.
- **Programming:**
 - Experienced: PYTHON, C++, Unix OS, Bash Shell, L^AT_EX.
 - Familiar: C, Mathematica, MATLAB.
 - Encountered: Fortran90, HTML.

LANGUAGES

- Mother tongue: Spanish
- Fluent: English, Portuguese
- Basics: German, Libras