

# MARÍA BENITO

## PERSONAL INFORMATION

Born on 1989, in Asturias, Spain

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<https://mariabenitocst.github.io/>

## EDUCATION

- 2015-2019*     **Instituto de Física Teórica, Universidade Estadual Paulista, São Paulo (Brazil)**  
Ph.D  
Supervisor: Prof. Dr. Fabio Iocco  
Title: *Dark Matter in the Milky Way: Uncertainties on its Distribution and Implications on its Particle Nature*
- 2013-2014*     **Instituto de Física Teórica, 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)**  
5-year 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. Dark Matter phenomenology in astrophysical environments. Galaxy formation and evolution. Multi-messenger astronomy. Statistics.

## FELLOWSHIPS & SCHOLARSHIPS

- 2015-2019*     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, Berlin (Germany)
- 2007-2008*     Excellence Grant to enter University by the Comunidad de Madrid (Spain)

## SCIENTIFIC VISITS

- August 2019-now*     Istituto Nazionale di Fisica Nucleare - Laboratori Nazionali di Frascati (INFN-LNF), Frascati (Italy)
- May-July 2019*     Gran Sasso Science Institute (GSSI), L'Aquila (Italy)

<i>April 2019</i>	Leibniz Institute for Astrophysics Potsdam (AIP), Potsdam (Germany)
<i>May, June 2018</i>	DESY, Zeuthen (Germany)
<i>January 2018</i>	CIEMAT, Madrid (Spain)
<i>July 2017</i>	DESY, Zeuthen (Germany)

## TALKS

## INVITED TALKS

<i>September 2019</i>	<b>Next Frontiers in the Search for Dark Matter</b> at Galileo Galilei Institute, Florence (Italy) “ <i>The Dark Matter distribution of the Milky Way (its uncertainties and their effect on the determination of new physics)</i> ”
<i>July 2019</i>	Talk at INFN - Laboratori Nazionali di Frascati (LNF), Frascati (Italy) “ <i>The Effect of Galactic Uncertainties on Particle Dark Matter Constraints</i> ”
<i>March 2019</i>	Seminar at University of Oslo, Oslo (Norway) “ <i>Determining the Distribution of Dark Matter in the Milky Way</i> ”
<i>December 2018</i>	Seminar at University of Turin, Turin (Italy) “ <i>Milky Way Dark Matter Density Profile</i> ”
<i>December 2018</i>	Talk at LAPTh, Annecy (France) “ <i>Milky Way Dark Matter Density Profile</i> ”
<i>December 2017</i>	Seminar at Institute for Theoretical Particle Physics and Cosmology, RWTH Aachen University, Aachen (Germany) “ <i>An Estimate of the Dark Matter Profile in the Galactic Bulge Region</i> ”

## CONFERENCES &amp; WORKSHOPS

<i>July 2019</i>	<b>CYGNUS 2019 workshop</b> at La Sapienza University, Roma (Italy) “ <i>Particle Dark Matter constraints: the effect of Galactic uncertainties</i> ”
<i>May 2019</i>	Talk at IFCA-CSIC, Santander (Spain) “ <i>The Effect of Galactic Uncertainties on Particle Dark Matter Constraints</i> ”
<i>April 2019</i>	Talk at Leibniz Institute for Astrophysics Potsdam (AIP), Potsdam (Germany) “ <i>Dark Matter in the Milky Way: Distribution, Uncertainties and the Impact for the Search of New Physics</i> ”
<i>February 2019</i>	<b>JSPS-FAPESP Workshop on Dark Energy, Dark Matter and Galaxies</b> at Universidade de São Paulo (USP), São Paulo (Brazil) “ <i>Searching for New Physics (and Dark Matter): Implications of Uncertainties in the Determination of Dark Matter Distribution in the Milky Way</i> ”
<i>November 2018</i>	<b>II South American Dark Matter Workshop</b> at IFT-UNESP/ICTP-SAIFR, São Paulo (Brazil) “ <i>The Effect of Galactic Uncertainties on Particle Dark Matter Constraints</i> ”
<i>October 2018</i>	<b>The Puzzle of Dark Matter, Assembling the Pieces</b> at DESY, Hamburg (Germany) “ <i>Particle Dark Matter Constraints: the Effect of Galactic Uncertainties</i> ”
<i>May 2018</i>	<b>Tensions in the <math>\Lambda</math>CDM Paradigm</b> 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”*

*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”*

#### EVENT ORGANIZATION

*September 2019*    **Autumn Institute 2019: Directional Sub-GeV Dark Matter Detection** at INFN-Laboratori Nazionali di Frascati, Frascati (Italy)  
<https://agenda.infn.it/event/19972/>

#### PROFESSIONAL MEMBERSHIPS

- Member of the CTA collaboration (since January 2017)

#### TECHNICAL SKILLS

- **Data Analysis:**  $\gamma$ -ray data analysis with CTOOLS; DS9, CLUMPY
- **Programming:**
  - Experienced: PYTHON, C++, Unix OS, Bash Shell, L<sup>A</sup>T<sub>E</sub>X
  - Familiar: C, Mathematica, IDL, MATLAB
  - Encountered: Fortran90, MPI, HTML

#### LANGUAGES

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