

# Fernando Valenciano, 2nd year PhD student at Instituto de Astrofísica de Canarias (IAC)



**Supervisors:** Jorge Martin Camalich, Arianna di Cintio and Giuseppina Battaglia

**Main Question:** *What is the nature of the Dark Matter particle?*



Bachelor in Physics  
UCM, Madrid



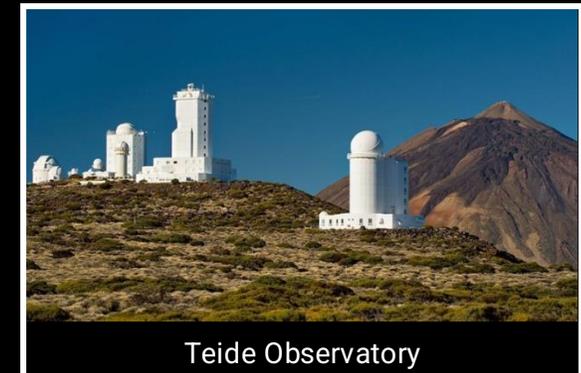
Research Fellowship  
IFIC, Valencia



MsC in Theoretical Physics  
& Astrophysics  
IFT UAM, Madrid



PhD  
IAC, Tenerife



Teide Observatory



Roque de los Muchahos Observatory

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## DYNAMICS of DWARF GALAXIES

1.1. “Cored galaxies in cuspy dark matter halos”

*Can the **photometry** of dwarf galaxies tell us something about their underlying DM distribution?*

1.2. EDGE Cosmological Simulation to study the Dark Matter distribution of Ultra-Faint Dwarf Galaxies



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## GAMMA-RAY ASTROPHYSICS

2.1. “Unidentified Sources in the Fermi-LAT catalog as potential Dark Matter Subhalos”

2.2. Gamma-ray emission in **Globular Clusters**

*What drives the gamma-ray emission in GCs?*

*How is the MSP population related to the GCs properties?*

2.3. Gamma-ray hadronic diffuse emission

*Should the cosmic-ray emission leave an imprint on the gamma-ray hadronic diffuse emission?*

