

# Dark Matter Halo Spin of the Dwarf Galaxy UGC 5288:

Insights from Observations, N-body and Cosmological Simulations

Sioree Ansar, PhD student at Indian Institute of Astrophysics ([sioree.ansar@iiap.res.in](mailto:sioree.ansar@iiap.res.in))



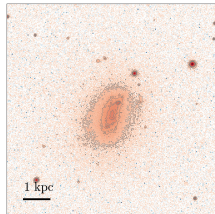
**Q. Can we measure Dark Matter halo angular momentum / Halo spin profile of galaxies?**

**Forward modeling of galaxies**

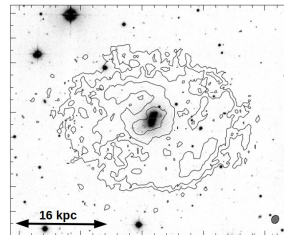
**What we have at hand?**

**Galaxy disk properties**

Stellar disk



Gas disk



Disk properties:

HI Rotation curve, Stellar bar properties,  
Stellar, gas and DM halo mass,  
Surface density and disk scale lengths.

# Dark Matter Halo Spin of the Dwarf Galaxy UGC 5288:

Insights from Observations, N-body and Cosmological Simulations

Sioree Ansar, PhD student at Indian Institute of Astrophysics ([sioree.ansar@iiap.res.in](mailto:sioree.ansar@iiap.res.in))



**Q. Can we measure Dark Matter halo angular momentum / Halo spin profile of galaxies?**

**Forward modeling of galaxies**

**Step 1:** Modeling DM halo profile using HI Rotation curves of galaxies.

**A Hybrid model using N-Body simulations**

**Step 2:** Modeling the stellar disk properties, like surface density, scale length, bar properties.

**Q. Can we measure Dark Matter halo angular momentum / Halo spin profile of galaxies?**

**Forward Modeling of galaxies  
using**

**Observed galaxy  
properties**



**N-Body  
Simulations**



**Comparison with  
Cosmological  
Simulations**

For more details:  
visit my [poster](#)