

Minigrant INAF 2022

Face-to-Face with the Local Universe: ISM's Empowerment (LOCAL)

Role	Name	Affiliation	FTE - Year 1	FTE - Year 2
PI	Viviana Casasola	INAF-IRA	0.5	0.5
Co-I	Simone Bianchi	INAF-OAA	0.5	0.6
Co-I	Francesco Salvestrini	INAF-OAA -> OATs	0.0	0.0

Close collaborators

Name	Affiliation
Matteo Bonato	INAF-IRA
Francesco Calura	INAF-OAS
Federico Esposito	UniBo/INAF-OAS
Laura Magrini	INAF-OAA
Francesca Pozzi	UniBo/INAF-OAS
Livia Vallini	INAF-OAS
Cristian Vignali	UniBo/INAF-OAS

Scientific Goals of LOCAL:

1. To understand the interplay between the components of the cold ISM (dust, gas, metals) in galaxies of the Local Universe
2. To consolidate/strengthen the participation of the INAF community to ISM studies in nearby galaxies by complementing the analysis on dust (from DustPedia) with that on gas and metals and promoting new lines of research

Awarded: 18 k€ (requested 20 k€) to support the expenses (travel and hardware) of the LOCAL collaboration

Connected INAF *Scheda*: The ISM of DustPedia galaxies (ISM_DP, PI: Simone Bianchi)

Objectives of LOCAL achieved so far

Deliverables

- D1: Paper submission, “Dust emissivity in resolved spiral galaxies”, Bianchi et al. (2022), A&A, 664, A187
- D2: Paper submission, “Modelling molecular clouds and CO excitation in AGN-host galaxies”, Esposito et al. (2023), MNRAS submitted
- D3: Paper submission, “A Bayesian chemical evolution model of the DustPedia galaxy M74”, Calura, et al. (2023), MNRAS, 523, 2351
- D4: Paper submission, “The resolved scaling relations in DustPedia: Zooming in on the local Universe”, Casasola et al. (2023), A&A, 668, A130

Milestones

- M1: Kick-off meeting

We plan:

- To submit at least other 2/3 papers in the context of the LOCAL project
- To extend our analysis to new/proprietary metallicity observations thanks to the Metal-THINGS survey

Funds used so far:

- ~40% after 10 months to support travels of 4 people

New entries in the LOCAL collaboration:

- Vidhi Tailor, PhD student @ INAF-IRA/UniBo
- Evangelos Paspaliaris, Post doc @ INAF-OAA

Criticalities:

- No significant criticalities

General considerations:

My personal feedback on INAF Minigrants is positive.

They provide the opportunity to individual researchers and/or small groups to be independent and therefore to grow and "strengthen".