



Andrea Occhiuzzi

Address: 5, Piazzale Aldo Moro, Room 101 Marco Building 1st floor, Rome, 00185, Italy, Italy (Work)

WORK EXPERIENCE

01/04/2022 – 31/03/2023 Roma, Italy

RESEARCH FELLOW "SAPIENZA" UNIVERSITY OF ROME

Development and characterization of several subsystems for experiments such as LSPE-SWIPE, LiteBIRD, MISTRAL, and for the ESA-HWP-TRL5 project.

EDUCATION AND TRAINING

10/2017 – 11/2021 Rome, Italy

MD IN ASTRONOMY AND ASTROPHYSICS "Sapienza" University of Rome

- Observational Cosmology
- Cosmic microwave background radiation
- Transition Edge Sensor
- Cryogenics

Address Piazzale Aldo Moro, 5, Rome, Italy | **Website** uniroma1.it/it/pagina-strutturale/home |

Field of study Physics | **Final grade** 110/110 | **Level in EQF** EQF level 7 |

Thesis Characterization of the multi-moded detectors for the LSPE- SWIPE receiver

10/2013 – 11/2017 Rome, Italy

BD IN PHYSICS "Sapienza" University of Rome

- Observational Cosmology

Address Piazzale Aldo Moro, 5 , Rome, Italy | **Website** uniroma1.it/it/pagina-strutturale/home |

Field of study Physics | **Final grade** 102/110 | **Thesis** The standard cosmological model

LANGUAGE SKILLS

Mother tongue(s): **ITALIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C1	B2	B2	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

● **DIGITAL SKILLS**

Suite Office (Excel, Word, PowerPoint) | Google Drive | LaTeX

Programming languages

C, C++ | Python | Fortran | HTML

Operating systems

Linux | Windows

Application Software

CAD SolidWorks | LabViewRT | Zeemax optic studio (Basic knowledge)

● **ADDITIONAL INFORMATION**

RESEARCH EXPERIENCE

Observational Cosmology

During the Astrophysics Laboratory course, I had the access to the laboratory's facilities for 6 months in order to assemble and to test the clamp-release system for the LSPE-SWIPE polarization modulator. My role consisted in assembling the prototype and in testing the performance both at room temperature and cryogenic temperature.

During my Master's degree thesis, I made electrical and optical tests on superconductive bolometers (TES) for LSPE-SWIPE at low temperatures. I was also involved in the tuning of the cryogenics system used for the pixel characterization. I performed the characterization of the TES prototype by measuring the time constant, the responsivity, the angular response and readout noise.

My current activity consists in the characterization of the optical elements by using a DFTS (Differential Fourier Transform Spectrometer) facility. My job consisted in the reflectance and transmittance characterization of different materials in order to select the best one which will be used as the absorber of the LiteBIRD optical tubes.

The accumulated experience has allowed me to increase my skills in the field of scientific and quantitative reasoning, handling of cryogenic instrumentation and readout electronics for cryogenic detectors; methods for electrical and optical characterization of microwave detectors, problem analysis and problem solving, writing effectiveness.

PUBLICATIONS

[L. Lamagna, M. Basilicata, A. Occhiuzzi, F. Columbro, A. Coppolecchia, G. D'Alessandro, P. de Bernardis, S. Masi, L. Mele, A. Paiella, G. Pisano, "A Testbed for Modeling Validation and Characterization of Quasi-optical Elements in Microwave Receivers"](#)

– 2022

Journal of Low Temperature Physics

[Fabio Columbro, Andrea Occhiuzzi, Luca Lamagna, Lorenzo Mele, Paolo de Bernardis, Silvia Masi, Francesco Piacentini, Giampaolo Pisano, "Broadband spectral characterization of lossy dielectrics for mm/submm optical applications"](#)

– 2022

Proc. SPIE 12180, Space Telescopes and Instrumentation 2022: Optical, Infrared, and Millimeter Wave

CONFERENCES AND SEMINARS

05/12/2022 – 08/12/2022 – Okayama, Japan

LiteBIRD F2F meeting Poster Presentation:

Andrea Occhiuzzi, F. Columbro, L. Lamagna, P. de Bernardis, S. Masi, F. Piacentini, G. Pisano "Broadband spectral characterization of lossy dielectrics for MHFT absorbers at Sapienza University"