



Giovanni Macelloni

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WORK EXPERIENCE

[01/01/2024 – Current]

Institute Director

CNR-Institute of Applied Physics "Nello Carrara"

City: Sesto Fiorentino

Country: Italy

[01/01/2021 – Current]

Research Director

CNR- Institute of Applied Physics "Nello Carrara"

City: Sesto Fiorentino

Country: Italy

[01/11/2019]

Adjunct Professor

University of Venice Ca' Foscari

City: Venezia

Country: Italy

[01/01/2010 – 31/12/2020]

Senior Scientist

CNR- Institute of Applied Physics "Nello Carrara"

City: Sesto Fiorentino

Country: Italy

[01/11/2001 – 31/12/2009]

Scientist

CNR- Institute of Applied Physics "Nello Carrara"

City: Sesto Fiorentino

Country: Italy

[01/04/1997 – 31/10/2001]

Scientist - Temporary Contract

CNR- Research Institute of Electromagnetic Wave -IROE

City: Firenze

Country: Italy

[01/01/1995 – 31/03/1997]

Collaboration

CNR- Research Institute of Electromagnetic Wave -IROE

City: Firenze

Country: Italy

[01/01/1994 – 31/12/1994]

Research Grant

Alenia Space

City: Roma

Country: Italy

EDUCATION AND TRAINING

[1993]

Graduated in Electronic Engineering M.Sc

University of Florence

[1985]

High School

Liceo Scientifico Niccolò Rodolico, Frenze (Italy)

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 READING C1 WRITING B2

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

French

LISTENING C1 READING C1 WRITING B2

SPOKEN PRODUCTION C1 SPOKEN INTERACTION C1

Spanish

LISTENING A2 READING A2 WRITING A2

SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

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

DIGITAL SKILLS

Microsoft Office | Matlab | Fortran Language

RESEARCH ACTIVITY

Scientific Interest

His research interest includes the development of systems and methodologies for the study of the Earth System by using remote sensing tools. The main interest includes the development of passive and active microwave systems and methods for the monitoring of the cryosphere (i.e. ice sheet, snow, sea ice) but also soil and vegetation. The research is carried out in the framework of several national and international programs granted by Italian Entities, the European community and Space Agencies (ESA, ASI, NASA and JAXA) and includes the participation to international teams for the studying of Polar Regions and the development and assessment of future space-borne missions devoted to cryosphere studies.

Professional Services

- From March 2022 - ongoing: National delegate at SCAR (Scientific Committee on Antarctic Research) , nominated by the Italian Minister of Research and Education.
- From 2018- ongoing- Member, representing CNR, of the Concordia Steering Committee devoted to the scientific and technical management of the Italian-French base of Concordia.

- From 2014- Ongoing: Member (nominated by WMO) of the Cryonet – team at Global Cryosphere Watch (GCW) of the WMO (World Meteorological Organization). He is also the Italian focal point for GCW
- From 2017-Ongoing Italian alternate representative at IACS- IUGG.
- From July 2022 -Ongoing : Co-chair of the ExPeg (Polar Expert Group) of the European Project Eupolarnet-2
- From March 2016 to March 2023 : Member of the CSNA (Italian Scientific Antarctic Commission) by the Italian Minister of Research and Education.
- From 2006 to 2013 : Member of the Mission Advisory Group of the ESA's COREH20 (Cold Regions Hydrology High-Resolution Observatory) mission one of the sixth mission of the Earth Explorer Programme. He was selected as a member of the team for both Phase-0 and Phase-A of the mission.

Accademic, Editorial, Evaluator Services

- Teacher at the university for seminars and lectures and responsible of the course Remote Sensing of Polar Regions for academic year 2019-2020, 2020-2021, 2021-2022, 2022-2023, 2023-2024 of the PhD course of Polar Sciences – University of Venice.
- Member of jury of PhD thesis for national and international universities and tutor and co-tutor of PhD student in Italy.
- External evaluator for national (MIUR) and international proposals (EC, INTAS, etc..) and consultant for Italian companies.
- Associate Editor of IEEE Transaction on Geosciences and Remote Sensing and has served as Editor and reviewer for many international journals (e.g. International Journal of Remote Sensing, IEEE Transaction on Geosciences and Remote Sensing, Remote Sensing of Environment, Radio Science) and international Symposiums.
- Member of the scientific committee of several international conferences and was co-chair of international symposia (10th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment (MICRORAD 2008); URSI Commission F Symposium on Microwave Signatures 2010 Specialist Microwave Remote Sensing of the Earth, Oceans, and Atmosphere) .

Recent Projects

- 2023 – present - Principal Investigator for IFAC of ESA contract 4D Greenland
- 2020 – present - Principal Investigator for IFAC of ESA contract SMOS ESL for SMOS Level 1 and Level 2 over Land, Ocean and Ice (ESA ref- RFQ/3-16138/19/I-BG)
- 2012- present - Principal Investigator of the ESA Contract : Technical Support for the Long-Term Deployment of an L-Band Radiometer at Concordia Station (ESTEC Contract 4000105872/12/NL/NF).
- 2019- 2023 - Principal investigator for IFAC of the ESA –contract – 4DAntarctica (ESA Contract – ESA-IPL-POE_NB-dp_RPF-2015-951)
- 2021 – 2023 - Principal investigator of the ASI contract: CryoRad – Follow On - Feasibility study for a spaceborne ultrawideband microwave radiometer for the monitoring of cryosphere
- 2017 – 2018 Principal investigator of the ASI contract: CryoRad -Feasibility study for a spaceborne ultrawideband microwave radiometer for the monitoring of cryosphere elements: sea ice volume, ice sheets temperature and soil state
- 2016- 2018 Principal Investigator for IFAC of the ESA contract – Scientific Evaluation of mission concepts snow mass and other cryospheric parameters (SnowConcepts)
- 2016 – 2018 : Principal Investigator of the Regione Toscana Project SWAMM - SOUNDING WATER VAPOUR BY ATTENUATION MICROWAVE MEASUREMENTS.
- 2014- 2017 Prinicpal Investigator of the ESA contract – STSE –SMOS+ Cryosphere –(ESA contract No.4000112262/14/I-NB)
- 2014-present Principal Investigator for IFAC of the NASA –ESTO project UWBRAD - Ultra-Wideband Software-Defined Microwave Radiometer for Ice Sheet Subsurface Temperature Sensing
- 2012- 2016 Principal Investigator of the PNRA contract : MAPME- Monitoraggio del Plateau Antartico attraverso l'emissione a Microonde

- 2010 –2014 - Principal Investigator for IFAC of the EC contract – Svalbard Integrated Arctic Earth Observing System - Preparatory Phase – N. 261747
- 2010 - 2014 – Principal Investigator of the ESA Contract : ALGOSNOW: Algorithms for Snow and Land Ice Retrieval using SAR data . ESTEC Contract AO 1-6511/10/NL/CT

Selected Recent Publications

Brogioni, M., Andrews, M.J., Urbini, S., Jezek, K.C., Johnson, J.T., Leduc-Leballeur, M., Macelloni, G., Ackley, S.F., Bringer, A., Brucker, L., Demir, O., Fontanelli, G., Yardim, C., Kaleschke, L., Montomoli, F., Tsang, L., Becagli, S., Frezzotti, M. , Ice Sheet and Sea Ice Ultrawideband Microwave radiometric Airborne eXperiment (ISSIUMAX) in Antarctica: first results from Terra Nova Bay ; *Cryosphere* , 17 , 1 , pp 255 - 278 ; 2023 ; DOI : 10.5194/tc-17-255-2023

Lapini, A., Bosisio, A.V., Macelloni, G., Brogioni, M. , An Antenna Pattern Correction Algorithm for Conical Scanning Spaceborne Radiometers: The CIMR Case ; *IEEE Transactions on Geoscience and Remote Sensing* , 61 , , pp - ; 2023 ; DOI : 10.1109/TGRS.2023.3238269

Picard, G., Leduc-Leballeur, M., Banwell, A.F., Brucker, L., Macelloni, G. , The sensitivity of satellite microwave observations to liquid water in the Antarctic snowpack ; *Cryosphere* , 16 , 12 , pp 5061 - 5083 ; 2022 ; DOI : 10.5194/tc-16-5061-2022

Jezek, K.C., Yardim, C., Johnson, J.T., Macelloni, G., Brogioni, M. , Analysis of ice-sheet temperature profiles from low-frequency airborne remote sensing ; *Journal of Glaciology* , 68 , 271 , pp 1027 - 1037 ; 2022 ; DOI : 10.1017/jog.2022.19

Lemmetyinen, J., Cohen, J., Kontu, A., Vehviläinen, J., Hannula, H.-R., Merkouriadi, I., Scheiblauer, S., Rott, H., Nagler, T., Ripper, E., Elder, K., Marshall, H.-P., Fromm, R., Adams, M., Derksen, C., King, J., Meta, A., Coccia, A., Rutter, N., Sandells, M., Macelloni, G., Santi, E., Leduc-Leballeur, M., Essery, R., Menard, C., Kern, M. , Airborne SnowSAR data at X and Ku bands over boreal forest, alpine and tundra snow cover ; *Earth System Science Data* , 14 , 9 , pp 3915 - 3945 ; 2022 ; DOI : 10.5194/essd-14-3915-2022

Jezek, K.C., Wang, S., Leduc-Leballeur, M., Johnson, J.T., Brogioni, M., Miller, J.Z., Long, D.G., Macelloni, G. , Relationships Between L-Band Brightness Temperature, Backscatter, and Physical Properties of the Ross Ice Shelf Antarctica ; *IEEE Transactions on Geoscience and Remote Sensing* , 60 , , pp - ; 2022 ; DOI : 10.1109/TGRS.2022.3218538

Demir, O., Johnson, J.T., Jezek, K.C., Brogioni, M., Macelloni, G., Kaleschke, L., Brucker, L. , Studies of Sea-Ice Thickness and Salinity Retrieval Using 0.5-2 GHz Microwave Radiometry ; *IEEE Transactions on Geoscience and Remote Sensing* , 60 , , pp - ; 2022 ; DOI : 10.1109/TGRS.2022.3168646

Andrews, M.J., Johnson, J.T., Brogioni, M., Macelloni, G., Jezek, K.C. Properties of the 500-2000-MHz RFI Environment Observed in High-Latitude Airborne Radiometer Measurements (2022) *IEEE Transactions on Geoscience and Remote Sensing*, 60, DOI: 10.1109/TGRS.2021.3090945