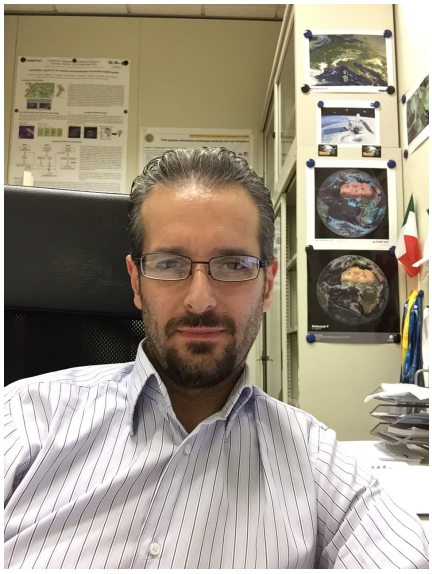

Sante Laviola
PhD

WORK ADDRESS

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PERSONAL DATA

Date of birth: July 21, 1973.
Place of birth: Policoro (Matera), Italy.

EDUCATION

2003	Graduated Environmental Engineering at the University of Basilicata. Thesis: "Characterization of Clouds from Satellite Data"
2003	Remote Sensing Summer School "Application with the newest Multi-Spectral Meteorological Satellites", 22-31 May, Maratea, Italy.
2005	Visiting Scientist at the MetOffice, Satellite Application Division, (UK).
2007	PhD in "Methods and Technologies for the Environmental Monitoring" at the University of Basilicata. Thesis: "Estrazione di parametri ottici e microfisici da immagini satellitari di sistemi nuvolosi"

EMPLOYMENT

2013 – Present Full-time Research Scientist at the CNR-ISAC, Satellite Meteorology.

2009 – 2013 Research Scientist at the CNR-ISAC, Satellite Meteorology.

2007 – 2009 Post-Doc at the CNR-ISAC, Satellite Meteorology.

RESEARCH INTERESTS

- Algorithm development for studying precipitation, hailstorms and cloud structure
- Satellite remote sensing severe storms (main focus on the Mediterranean basin)
- Climate studies of extreme weather
- Atmospheric Rivers
- Storm-producing the Terrestrial Gamma Ray-flashes (TGF)

MEMBERSHIPS IN SCHOLARLY SOCIETIES

- AMS - American Meteorological Society
- EGU - European Geosciences Union
- AIT - Associazione Italiana Telerilevamento
- AISAM - Associazione Italiana Scienze dell'Atmosfera e Meteorologia

REVIEWING AND EDITORIAL ACTIVITIES

Reviewer for the following international journals

- Advances in Geosciences
- Advances in Meteorology
- Atmospheric Research
- European Journal of Remote Sensing
- Geophysical Research Letters (GRL)
- IEEE Gescience and Remote Sensing Letters
- IEEE Transactions on Geoscience and Remote Sensing
- IEEE Selected Topics in Applied Earth Observations and Remote Sensing
- Journal of Geophysical Research (JGR)
- Journal of Hydrometeorology
- Quarterly Journal of the Royal Meteorological Society
- Journal of Hydrology
- Earth System Science Data (ESSD)
- MDPI Remote Sensing
- Journal of Applied Meteorology and Climatology (JAMC)

Current editorial activities in international journals

- Guest Editor for the MDPI Remote Sensing Special Issue: Satellite Microwave Remote Sensing for Severe Storms Detection
- Review Editor for Frontiers in Climate (Frontiers Journal)

LEADERSHIP AND/OR PARTICIPATION TO SCIENTIFIC PROJECTS

2007 – 2017	Satellite Application Facility on Support to Operational Hydrology and Water Management (H-SAF). Funded: EUMETSAT.
2007 – 2011	PROSA–Prodotti di osservazione satellitare per allerta meteorologica PI: Dr. Franco Prodi. Funded: Agenzia Spaziale Italiana (ASI).
2007 – 2010	Progetto Strategico "Nowcasting avanzato con l'uso di tecnologie GRID e GIS", PI: Dr. Franco Prodi. Funded: Regione Puglia.
2011 – 2012	Partner of the European Comm. GMES Project "A collaborative project aimed at pre-validation of a GMES Global Water Scarcity Information Service – GLOWASIS", PI: Dr. Rogier Westerhoff, Deltares.
2013 – 2017	Partner of WP3 of the European Comm. Collaborative Project "Global Earth Observation for integrated water resource assessment - EartH2Observe", PI: Dr. Jaap Schellekens, Deltares
2013 – 2015	Research Project "NextSnow", PI: Dr. Vincenzo Levizzani. Funded: Project of Interest "NextData".
2014 – 2016	Space Advanced Project Excellence in Research and Enterprise (SAPERE), PI: Andrea Pietropaolo. Funded: Industrial cluster
2014 – 2016	PON03_00067_6 "Apulia Space", PI: Distretto Tecnologico Aerospaziale (DTA) - Puglia. Funded: MIUR
2015 – 2016	Telerilevamento da satellite della tipologia di precipitazione sulla regione Antartica", PI: Dr. Daniele Casella. Funded: Programma Nazionale di Ricerche in Antartide (PNRA).
2015 – 2017	Pilot Project "RAilway Meteorological SEcurity System (RAMSES)" PI: Ing. Salvatore Gabriele, CNR-IRPI. Funded: RFI, Direzione Territoriale Produzione Reggio Calabria.
2016 – 2017	Bilateral project CNR-AORI "Comparison of tornadic supercells and their environmental conditions in Japan and Italy", PI: Dr. Miglietta Mario, CNR-ISAC.
2018 – 2019	European Comm. Collaborative Project H2020 "Copernicus Evolution And Applications with Sentinell Enhancements and Land Effluents for Shores and Sea (CEASELESS)", PI: Prof. Agustín Sánchez-Arcilla, Technical University of Catalonia BarcelonaTech – UPC
2019 – Present	Raincast – ESA AO/1-9324/18/NL/NA A multi-platform and multi-sensor study to address the requirement from the research and operational communities for global precipitation measurements. Co-resposable for Task 3.2.2 and contributor to WP2200 and WP4000. PI: Prof. Dr. Alessandro Battaglia, University of Leicester

VISITING SCIENTIST ACTIVITY

2005	UK MetOffice, Satellite Application Division, Exeter (UK).
2010	Swedish Meteorological and Hydrological Institute (SMHI), Atmospheric Remote Sensing Research Division, Norrköping (S).
2014	National Oceanic and Atmospheric Administration (NOAA), Center for Satellite Applications and Research (STAR) Division, University of Maryland, College Park, USA.
2019	National Oceanic and Atmospheric Administration (NOAA), Center for Satellite Applications and Research (STAR) Division, University of Maryland, College Park, USA.

TEACHING

2008 – Present	Cloud Physics (sector FIS/06), Univ. of Bologna, Dept. of Physics. Course lectures: Passive Microwave Remote Sensing: Theory and Methods

Schools and Training Courses

2009	EUMETSAT H-SAF Training and User Service: “Precipitation Rates at Ground by GEO/IR Supported by LEO/MW”. USAM , Rome, 14-15 December
2014	EUMETSAT International Remote Sensing School for Hydrological Applications: “PMW–IR blended technique for precipitation products” Dipartimento di Protezione Civile, Rome, 14-18 July.
2016	8th IPWG Training Event, Retrieval Algorithms Session: “Microwave Sounder Precipitation Algorithms”. CNR, Bologna, 3-7 October
2018	EUMETSAT Autumn School 2018: “Use of satellite data and products for severe weather nowcasting”. Thessaloniki, Greece, 24-28 September

STUDENT ADVISING

Doctor in Physics and Mathematics

1. Academic year 2008-2009 Francesco Marra. Doctor in Physics, Dept. of Physics, Univ. of Bologna. Thesis: Misura della precipitazione da satellite mediante un nuovo algoritmo a 183 GHz. Tutors: V. Levizzani, **S. Laviola**.
2. Academic year 2009-2010 Stefania D'Aurizio. Doctor in Physics, Dept. of Physics, Univ. of Bologna. Thesis: Sviluppo di un algoritmo per la stima della precipitazione nevosa nelle microonde ad alta frequenza da satellite. Tutors: V. Levizzani, **S. Laviola**.
3. Academic year 2011-2012 Alice Malvaldi. Doctor in Physics, Univ. of Bologna. Thesis: Cicloni di tipo tropicale nel Mediterraneo: Analisi combinata da satellite e modello. Tutors: V. Levizzani, **S. Laviola,** M. M. Miglietta.
4. Academic year 2012-2013 Massimo Valeri. Doctor in Physics, Univ. of Bologna. Thesis: Analisi satellitare della struttura fisica di un ciclone di tipo tropicale sul Mediterraneo. Tutors: V. Levizzani, **S. Laviola**, M. M. Miglietta.
5. Academic year 2014-2015 Diego Cerrai. Doctor in Physics of the Earth System, Univ. of Bologna. Thesis: Moisture and vorticity in Medicanes: Theoretical approach and case studies. Tutors: V. Levizzani, **S. Laviola**, M. M. Miglietta, E. Cattani.
6. Academic year 2014-2015 Francesca Vittorioso. Doctor in Physics, Univ. of Bologna. Thesis: An inter-comparison between a VIS/IR and a MW satellite-based methods for cloud detection and classification. Tutors: V. Levizzani, E. Cattani, **S. Laviola**.
7. Academic year 2015-2016 Matteo Ponzano. Doctor in Physics, Univ. of Bologna. Thesis: Simulazione della risposta dei radiometri satellitari nelle microonde AMSU-B e MHS per il retrieval della precipitazione nevosa e studio di sensibilità dell'algoritmo 183-WSL. Tutors: V. Levizzani, **S. Laviola**.
8. Academic year 2017-2018 Paolo Pettinari. Doctor in Physics, Univ. of Bologna. Thesis: Studio di sensibilità dei sensori MHS, ATMS, GMI, SSMIS e sviluppo di un algoritmo prototipale per il retrieval del vapore acqueo. Tutors: V. Levizzani, **S. Laviola**, Alessandro Tiesi.
9. Academic year 2018-2019 Stefano Della Fera. Doctor in Physics, Univ. of Bologna. Thesis: Il ruolo di un *atmospheric river* nell'evento di precipitazione estrema dell'ottobre 2018 in Italia. Tutors: V. Levizzani, S. Davolio, **S. Laviola**, M. M. Miglietta.

<u>Batchelor Degree in Atmospheric Physics and Meteorology</u>

1. Academic year 2009-2010 Michele Cicoria. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: Prima validazione di una maschera di copertura nevosa nelle microonde ad alta frequenza. Tutors: V. Levizzani, **S. Laviola**.
2. Academic year 2009-2010 David Fibbi. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: Utilizzo di dati satellitari nell'analisi di eventi di precipitazione intensa. Tutors: V. Levizzani, **S. Laviola**, D. Conte, M. M. Miglietta.
3. Academic year 2009-2010 Massimo Valeri. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: Stima della precipitazione nevosa da satellite. Tutors: V. Levizzani, **S. Laviola**.

4. Academic year 2009-2010 Mauro Bianconi. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: Utilizzo delle microonde ad alta frequenza per la stima della precipitazione. Tutors: V. Levizzani, **S. Laviola**.
5. Academic year 2009-2010 Alessandro Maffioli. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: Caratterizzazione delle nubi e formazione delle idrometeore mediante sensori satellitari di ultima generazione. Tutors: V. Levizzani, E. Cattani, **S. Laviola**.
6. Academic year 2011-2012 Jacopo Alessandri. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: I cicloni di tipo tropicale sul Mediterraneo. Tutors: V. Levizzani, **S. Laviola**.
7. Academic year 2013-2014 Giulio Mucci. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: L'attività elettrica nei cicloni tropicali e di tipo tropicale. Tutors: V. Levizzani, **S. Laviola**.
8. Academic year 2013-2014 Lorenzo Smorlesi. Degree in Atmospheric Physics and Meteorology, Dept. of Physics, Univ. of Bologna. Thesis: I Medicane – Cicloni di tipo tropicale. Tutors: V. Levizzani, **S. Laviola**.
9. Academic year 2014-2015 Veronica Masi. Degree in Physics and Mathematics, Dept. of Physics, Univ. of Bologna. Thesis: Aspetti fondamentali dell'interazione tra la radiazione nelle microonde e le nubi nell'osservazione satellitare. Tutors: V. Levizzani, **S. Laviola**.

Ph.D.

1. 2012 Andrès Merino Suances. Dept. of Chemistry and Applied Physics, Univ. of Leon, Leon, Spain. Thesis: Analysis, identification and forecasting of hail precipitation events in the Iberian Peninsula. Advisors. Jose Luis Sànchez Gomez, Laura Lopez Campano, Eduardo Garcia Ortega. International Reviewer: **S. Laviola**.

EDUCATIONAL SEMINARS

1. **S. Laviola**, **2019**: "Typicity and territoriality of local wines in a changing climate - Climate change and viticulture: what's the future?", I.T.A.S. ''G. Briganti'', Matera, 2 March 2019
2. **S. Laviola**, **2019**: "Climate change and biodynamic viticulture", 1st Congress - Evoluzione Naturale, Grottaglie, 27 January 2019
3. **S. Laviola**, **2017**: "Tornado in Italia: un rischio sottovalutato?", 15th Festival della Scienza – Contatti, Genova, 04 November 2017
4. **S. Laviola**, **2013**: "Osservazioni dallo spazio dell'acqua in atmosfera", 10th Festa Internazionale della Storia – Noi: storia e futuro – 19-27 October 2013
5. **S. Laviola**, **2012**: "Il Ciclo Idrologico: principi fisici di funzionamento della macchina della vita", 9th Festa Internazionale della Storia – I Patrimoni della Storia – 20-28 October 2012

NATIONAL/INTERNATIONAL CONFERENCES

1. **Laviola S.**, G. Monte, V. Levizzani, R. Ferraro, J. Beauchamp, **2021**: "Hail Detection from the GPM Constellation: a prospect for a global hailstorm climatology**"**, 3rd AISAM National Congress European, L'Aquila, Italy, February.
2. **Laviola S.**, R. Ferraro, J. Beauchamp, V. Levizzani, **2018**: "Cloud Type Classification and Solid Precipitation Retrieval from Satellite Microwave Sensors", 1st AISAM National Congress European, Bologna, Italy, September**.**
3. Manzato A., V. Riva, M. Miglietta and **S. Laviola**, **2017**: "Analysis and simulations of the 7 July 2007 large hailstorm in NE Italy", 9th European Conference on Severe Storms (ECSS), Pula, Croatia, September**.**
4. **Laviola S.**, and co-authors (14), **2017**: "Meteorological tools in support to the railway security system on the Calabria region", European Geosciences Union General Assembly 2017, Wien, Austria, April**.**
5. **Laviola S.**, M. M. Miglietta, D. Cerrai, Elsa Cattani, and V. Levizzani, **2016**: "Potential vorticity patterns in Mediterranean hurricanes", European Geosciences Union General Assembly 2016, Wien, Austria, April**.**
6. **Laviola S.**, E. Cattani, V. Levizzani, and G. P. Marra, **2016**: "Classificazione e identificazione di nubi grandinigene col metodo MicroWave Cloud Classification (MWCC)", VIII Convegno Nazionale AIT, 15-16-17 giugno 2016, Palermo.
7. **Laviola S.**, J. Beauchamp, R. Ferraro, and V. Levizzani, **2015**: "Two passive microwave prototype methods for hail detection", European Geosciences Union General Assembly **2015**, Wien, Austria, April.
8. **Laviola S.**, M Valeri, M.M. Miglietta, and V. Levizzani, **2014**: "Multi-sensor approach for a satellite detection and characterization of Mediterranean Hurricanes: a case study", European Geosciences Union General Assembly 2014, Wien, Austria, April.
9. Gabriele S., **Laviola S.**, F. Chiaravalloti, **2014**: "Meteorological considerations and satellite retrievals in supporting to the assessment of local hydrologic homogeneity over Italy", 7th IPWG Workshop on Precipitation Measurements, Tsukuba, 17-21 November.
10. Gabriele S., **Laviola S.**, V. Levizzani, M. M. Miglietta, L. Balcini, S. Dietrich, S. Federico, and G.P. Marra, **2014**: "Analysis and investigation of extreme rainfall events combining different data sources", European Geosciences Union General Assembly 2014, Wien, Austria, April.
11. Levizzani V., **S. Laviola**, E. Cattani, and M. J. Costa, **2013**: "Extreme precipitation on the Island of Madeira on 20 February 2010 as seen by the satellite passive microwave sounders", European Geosciences Union General Assembly 2013, Wien, Austria, April.
12. **Laviola S.**, A. Moscatello, M. M. Miglietta, E. Cattani, and V. Levizzani, **2012**: "A satellite and numerical model combined approach to study extreme rain events over the Mediterranean basin", European Geosciences Union General Assembly 2012, Wien, Austria, 22 – 27 April.
13. **Laviola, S.**, Gabriele, S., Miglietta, M.M., Cattani, E., Levizzani V, **2012**: "Meteo-hydrological analysis of intense flash-flood events over Southern Italy". Atti 86° Congresso della Società Geologica Italiana, vol. 21, Collana 2012.
14. **Laviola S.**, E. Cattani, and V. Levizzani, **2011**: "Rainfall estimations and characterization of snow-covered terrains: Validation of the new version of the 183-WSL retrieval method", European Geosciences Union General Assembly 2011, Wien, Austria, 03 – 08 April.

15. **Laviola S.**, S. D'Aurizio, E. Cattani, and V. Levizzani, **2010**: "Characterization of Snow-Covered Terrains and Detection of Snowfall by Using the 183-WSL Retrieval Scheme", 5th Workshop of the International Precipitation Working Group, Hamburg, Germany, 11-15 October.
16. **Laviola S.** and V. Levizzani, **2008**: "Observing precipitation with AMSU-B opaque channels: the 183-WSL algorithm", 4th Workshop of the International Precipitation Working Group, Beijing, China, 13-17 October.
17. Torricella F., E. Cattani, **S. Laviola** and V. Levizzani, **2008**: "On the statistical relationship between the optical and microphysical characteristics of (warm topped) clouds from AVHRR and the rainfall intensity derived from new AMSU rain algorithm", 4th Workshop of the International Precipitation Working Group Beijing, China, 13-17 October.
18. **Laviola S.**, V. Levizzani, M. M. Miglietta, and A. Moscatello, **2008**: "Satellite and numerical model investigation of two Mesoscale Convective Systems over Central Mediterranean", EGU 10th Plinius Conference on Mediterranean Storms, Nicosia, Cyprus, Vol. 10, 22–24 September.
19. Torricella F., E. Cattani, V. Levizzani, and **S. Laviola**, **2008**: "On the statistical relationship between the optical and microphysical characteristics of warm topped clouds from AVHRR and the rainfall intensities derived from AMSU ", EGU 10th Plinius Conference on Mediterranean Storms, Nicosia, Cyprus, Vol. 10, 22–24 September.
20. **Laviola S.**, and V. Levizzani, **2008**: "Rain retrieval using the 183-WSL algorithm", Proc. of EUMETSAT Meteorological Satellite Conference, Darmstadt, Germany, 8-12 September.
21. **Laviola S.**, and V. Levizzani, **2008**: "Rain retrieval using the 183-WSL algorithm", Proc. of European Geosciences Union General Assembly, Vienna, Austria, 13-18 April.
22. **Laviola S.**, and V. Levizzani, **2008**: "Rain retrieval using the 183-WSL algorithm", Proc. Of International Conference on Clouds and Precipitation, Cancun, Mexico, 7-11 July. CD-ROM.
23. Cimini D., V. Cuomo, **S. Laviola**, T. Maestri, P. Mazzetti, S. Nativi, J. M. Palmer, R. Rizzi, F. Romano, **2005**: "Cloud parameters from infrared and microwave satellite measurements", Proc. Of ITWG: ITSC-XIV, Beijing, China, 25-31 May.

H-index (ISI-WoS): 12
H-index (Scopus): 14
H-index (Google Scholar): 14

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Scopus-ID: 35345247500

PUBLICATIONS

Technical reports

1. **Laviola S.**, Visiting Scientist Activity, **2015**: “Development of a passive microwave prototype method for hail detection and validation of the 183-WSL algorithm over CONUS. NOAA Technical Report, p. 20, NOAA/STAR.
2. **Laviola S.**, Visiting Scientist Activity, **2011**: “Validation and evaluation of different AVHRR and AMSU/MHS based precipitation retrieval algorithms. EUMETSAT SAF-NWC Technical Report, p. 34, SMHI.
3. **Laviola S.**, Visiting Scientist Activity, **2006**: “Rain rate detection using scattering index approach. A quantitative comparison of two techniques and an improvement of Bennartz algorithm”, EUMETSAT SAF-NWP Technical Report, p. 22, MetOffice.

Books

1. Levizzani V. and **S. Laviola**, **2020**: “Snow cover and snowfall from satellite passive microwave sensors”. Climate and environmental changes in the Italian mountains. Edited by Assunta Donato and Elisa Palazzi. NextData Project.
2. Ferraro, R.R., D. Cecil, and **S. Laviola**, **2020**: “Hailfall detection”. In Satellite Precipitation Measurements. Levizzani, V., C. Kidd, D. B. Kirschbaum, C. D. Kummerow, K. Nakamura, and F. J. Turk, Eds., Advances in Global Change Research, 69, Springer Nature, Cham, 791-817, doi.org/10.1007/978-3-030-35798-6_17.
3. Kidd C., V. Levizzani and **S. Laviola**, **2013**: “Quantitative Precipitation Estimation from Earth Observation Satellites”, in "Rainfall: State of the Science", Geophysical Monograph Series, ISBN 978-0-87590-481-8, vol. 191, 288 p.
4. **Laviola S.**, and V. Levizzani, **2010**: “Passive Microwave Remote Sensing of Rain from Satellite Sensors”, in "Advanced Microwave and Millimeter Wave Technologies Semiconductor Devices Circuits and Systems", Ed. M. Mukherjee, InTech, ISBN 978-953-307-031-5, 642 p.

International journals

1. **Laviola S.**, G. Monte, V. Levizzani, R. R. Ferraro, and J. Beauchamp, **2020**: A New Method for Hail Detection from the GPM Constellation: A Prospect for a Global Hailstorm Climatology. Remote Sens. 2020, 12(21), 3553; https://doi.org/10.3390/rs12213553.
2. Davolio S., S. Della Fera, **S. Laviola**, M. M. Miglietta, and V. Levizzani, **2020**: Heavy Precipitation over Italy from the Mediterranean Storm “Vaia” in October 2018: Assessing the Role of an Atmospheric River. Mon. Wea. Rev., 148 (9), 3571-3588; https://doi.org/10.1175/MWR-D-20-0021.1
3. **Laviola S.**, V. Levizzani, R. R. Ferraro, and J. Beauchamp, **2020**: Hailstorm detection by satellite microwave radiometers. Remote Sens. 2020, 12(4), 621; https://doi.org/10.3390/rs12040621.
4. Miglietta, M. M., D. Cerrai, **S. Laviola**, E. Cattani, V. Levizzani, **2017**: Potential vorticity patterns in Mediterranean “hurricanes”. Geophys. Res. Lett., 44, https://doi.org/10.1002/2017GL072670.
5. Gascón, E., **S. Laviola**, A. Merino, and M. M. Miglietta, **2016**: Analysis of a localized flash-flood event over the central Mediterranean. Atmos. Res., 182, 256-268, https://doi.org/10.1016/j.atmosres.2016.08.007.

6. Gjesteland, T., N. Østgaard, **S. Laviola**, M. M. Miglietta, E. Arnone, M. Marisaldi, F. Fuschino, A. B. Collier, F. Fabro, and J. Montanya, **2015**: Observation of intrinsically bright Terrestrial Gamma ray Flashes from the Mediterranean basin. J. Geophys. Res.,120, 12143-12156, https://doi.org/10.1002/2015JD023704.
7. **Laviola, S.**, J. Dong, C. Kongoli, H. Meng, R. Ferraro, and V. Levizzani, **2015**: An intercomparison of two passive microwave algorithms for snowfall detection over Europe. IEEE Geosci. Remote Sensing Symp., 886- 889, doi:10.1109/IGARSS.2015.7325907.
8. Puca, S., F. Porcù, A. Rinollo, G. Vulpiani, P. Baguis, S. Balabanova, E. Campione, A. Ertürk, S. Gabellani, R. Iwanski, et al., **2014**: The validation service of the hydrological SAF geostationary and polar satellite precipitation products, Natural Hazards and Earth System Sciences, vol. 14, no. 4, pp. 871-889, https://doi.org/10.5194/nhess-14-871-2014.
9. **Laviola S.**, V. Levizzani, E. Cattani, and C. Kidd, **2013**: The 183-WSL fast rain rate retrieval algorithm. Part II: Validation using ground radar measurements. Atmos. Res., 134, 77-86, https://doi.org/10.1016/j.atmosres.2013.07.013.
10. Rinollo A., G. Vulpiani, S. Puca, P. Pagliara, J. Kaňák, E. Lábó, L'. Okon, E. Roulin, P. Baguis, E. Cattani, **S. Laviola**, and V. Levizzani, **2013**: Definition and impact of a quality index for radar-based reference measurements in the H-SAF precipitation product validation. Nat. Hazards Earth Syst. Sci., 13, 2695-2705, https://doi.org/10.5194/nhess-13-2695-2013.
11. Mugnai, A., D. Casella, E. Cattani, S. Dietrich, F. Di Paola, **S. Laviola**, V. Levizzani, G. Panegrossi, P. Sanò, D. Biron, L. De Leonibus, D. Melfi, P. Rosci, A. Vocino, F. Zauli, S. Puca, A. Rinollo, L. Milani, F. Porcù, and F. Gattari, **2013**: Precipitation products from the Hydrology SAF. Nat. Hazards Earth Syst. Sci., 13,1959-1981.
12. Levizzani V., **S. Laviola**, E. Cattani, and M. J. Costa, **2013**: Extreme precipitation on the Island of Madeira on 20 February 2010 as seen by satellite passive microwave sounders. European J. Remote Sensing, 46, 475-489.
13. Miglietta M.M., **S. Laviola**, A. Malvaldi, D. Conte, V. Levizzani, and C. Price, **2013**: Analysis of tropical-like cyclone over the Mediterranean Sea through a combined modelling and satellite approach. Geophys. Res. Lett., 40, 2400-2405, https://doi.org/10.1002/grl.50432
14. **Laviola S.**, V. Levizzani, E. Cattani, and C. Kidd, **2012**: First validation of retrieved rain rates and snow cover mask of the 183-WSL retrieval method. 12th Specialist Meeting of Microwave Radiometry and Remote Sensing of the Environment, IEEE, E-ISBN doi:10.1109/MicroRad.2012.6185242.
15. Levizzani V., **S. Laviola**, and E. Cattani, **2011**: Detection and measurement of snowfall from space. Remote Sensing, 3(1), 145-166, https://doi.org/10.3390/rs3010145.
16. **Laviola S.**, and V. Levizzani, **2011**: The 183-WSL fast rain rate retrieval algorithm. Part I: Retrieval design. Atmos. Res., 99, 443-461, https://doi.org/10.1016/j.atmosres.2010.11.013.
17. **Laviola S.**, A. Moscatello, M. Miglietta, E. Cattani, and V. Levizzani, **2011**: Satellite and numerical model investigation of two heavy rain events over Central Mediterranean. J. Hydrometeor., 12, 634-649, https://doi.org/10.1175/2011JHM1257.1.
18. **Laviola S.**, and V. Levizzani, **2009**: Observing precipitation by means of water vapor absorption lines: a first check of the retrieval capabilities of the 183-WSL rain retrieval method. Italian Journal of Remote Sensing, 41(3), 39-49.

19. E. Cattani, F. Torricella, **S. Laviola** and V. Levizzani, V., **2009**: On the statistical relationship between cloud optical and microphysical characteristics from AVHRR and rainfall intensity derived from a new AMSU rain algorithm. Nat. Hazards Earth Syst. Sci., 9, 2135-2142, https://doi.org/10.5194/nhess-9-2135-2009.
20. **Laviola S.**, and V. Levizzani, **2008**: Rain retrieval using 183 GHz absorption lines. 10th Specialist Meeting of Microwave Radiometry and Remote Sensing of the Environment, IEEE, E-ISBN, doi:10.1109/MICRAD.2008.4579505.
21. **Laviola S.**, V. Cuomo, and F. Romano, **2005**: Precipitation rate estimations from AMSU data. Atti della Fondazione Giorgio Ronchi, vol. 4, pp. 673-680.