



2nd International School on Satellite Meteorology

Remote sensing theory and retrieval methods, AI lab, quantum technologies and HPC architectures, digital twin models of the Earth and future satellite missions

Location: **CNR Territorial Research Area Conference Centre – Bologna (Italy)**

When: **1 - 5 September 2025**

Registration deadline: **30 June 2025**

Website: <http://issm.isac.cnr.it>

Final program ISSM 2025

Monday 1st – Theoretical basis of the satellite meteorology

- 08:30 – 09:00 *Registration of attendees*
- 09:00 – 09:30 *Welcome to International School on Satellite Meteorology 2025*
- 09:30 – 11:00 **OPENING LECTURE:** Remote sensing in meteorology: the perspective from space! (C. Kidd, NASA-GFSC)
- 11:00 – 11:30 Coffee break
- 11:30 – 13:00 Theoretical radiative transfer at SW and LW (T. Maestri, UniBologna)
- 13:00 – 14:00 Lunch
- 14:00 – 14:30 Students self-introduction
- 14:30 – 15:30 Cloud microphysics and cosmic rays (F. Belosi, CNR-ISAC)
- 15:30 – 17:30 In-depth lab on radiative transfer (T. Maestri, UniBologna)

Tuesday 2nd – Methods and techniques for space weather and weather extremes

- 08:30 – 10:00 Precipitation retrieval from space (C. Kidd, NASA-GFSC)
- 10:00 – 11:00 Inverse techniques from space-borne microwave sounders for the retrieval of atmospheric properties (A. Gambacorta, NASA-GFSC)
- 11:00 – 11:30 Coffee break
- 11:30 – 13:00 Enhancing the prediction of weather extremes within the Destination Earth Initiative (E. Gascon, ECMWF)

- 13:00 – 14:00 Lunch
- 14:00 – 15:30 Deep learning methods to Earth system data (C. Acquistapace, UniCologne)
- 15:30 – 17:30 In-depth lab on “Build your AI scheme” (N. Cortesi, UniTorino)

Wednesday 3rd – Walking up to clouds

- 07:30 – 19:00 Excursion to the WMO Italian Climate Observatory “Ottavio Vittori” on the top of Mount Cimone (2165 m)

Thursday 4th – Quantum technologies and operational High-Performance Computing for Meteorology and Climate

- 09:00 – 11:00 Quantum Technologies for fluid dynamics applications (C. M. Sanavio, IIT)
- 11:00 – 11:30 Coffee break
- 11:30 – 13:30 Students Working Group activity
- 13:30 – 14:30 Lunch
- 15:30 – 17:30 Visit to ECMWF’s data centre
- 20:00 – Social dinner

Friday 5th – Promising and future satellite missions

- 09:00 – 11:00 The Italian satellites to monitor environmental changes and support decision-making processes (L. Candela, ASI-Telespazio)
- 11:00 – 11:30 Coffee break
- 11:30 – 13:00 New horizons in hyperspectral microwave sounding from space: the Advanced Ultra-High Resolution Optical RADIometer (AURORA) (A. Gambacorta, NASA-GSFC)
- 13:00 – 14:00 Lunch
- 14:00 – 14:30 Handing of ISSM 2025 Certificate of Attendance
- 14:30 – 15:30 Short presentations of working group activity



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