

INRIM AS WMO'S MEASUREMENT LEAD CENTRE ON TRACEABILITY AND FIELD METROLOGY

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Since more than a decade, INRiM has been active a “metrology research service” to meteorology and climatology. In June 2024, the World Meteorological Organization (WMO) has designated INRiM’s laboratories and field sites as “WMO Measurement Lead Centre on Traceability and Field Metrology”. This designation successfully seals INRiM’s application process, approved and presented by the National Permanent Representative at the WMO. The novel infrastructure includes the climatological reference station inaugurated in 2023 near Turin, inside Stupinigi natural park, a mountain station, field sites and several laboratories of the INRiM’s Campus, including the “EDDIE” tunnel.

The new WMO Measurement Lead Center will provide innovative and dedicated calibration methods – both in field and in laboratory – for temperature sensors and other environmental parameters, also for extreme environments. It cooperates with universities and research institutes for the characterization of instruments with particular focus towards surface weather stations, radiosondes for high atmosphere, permafrost evolution, measurements in caves, mountain cryosphere, polar environment and more. The Center also works in understanding and evaluating components of uncertainties for measurements of Essential Climate Variables in the field, thus including those hard-to-evaluate environmental factors and associated quantities of influence.

The Climate Reference Station, the INRiM mountain sites and research fields, part of the new WMO Measurement Lead Center, will allow the field testing of instrumentation for meteorological, cryosphere, and air quality applications, the evaluation of uncertainty in meteorology and climate, intercomparisons of instruments, testing of radiosondes, temperature and humidity sensors for ground stations, and more. A new intercomparison for the Global Climate Observing System Surface Reference Network (GSRN) is planned to start in late 2025.

This poster details the INRiM’s infrastructure, laboratories and field sites completing the new official WMO’s Measurement Lead Centre.