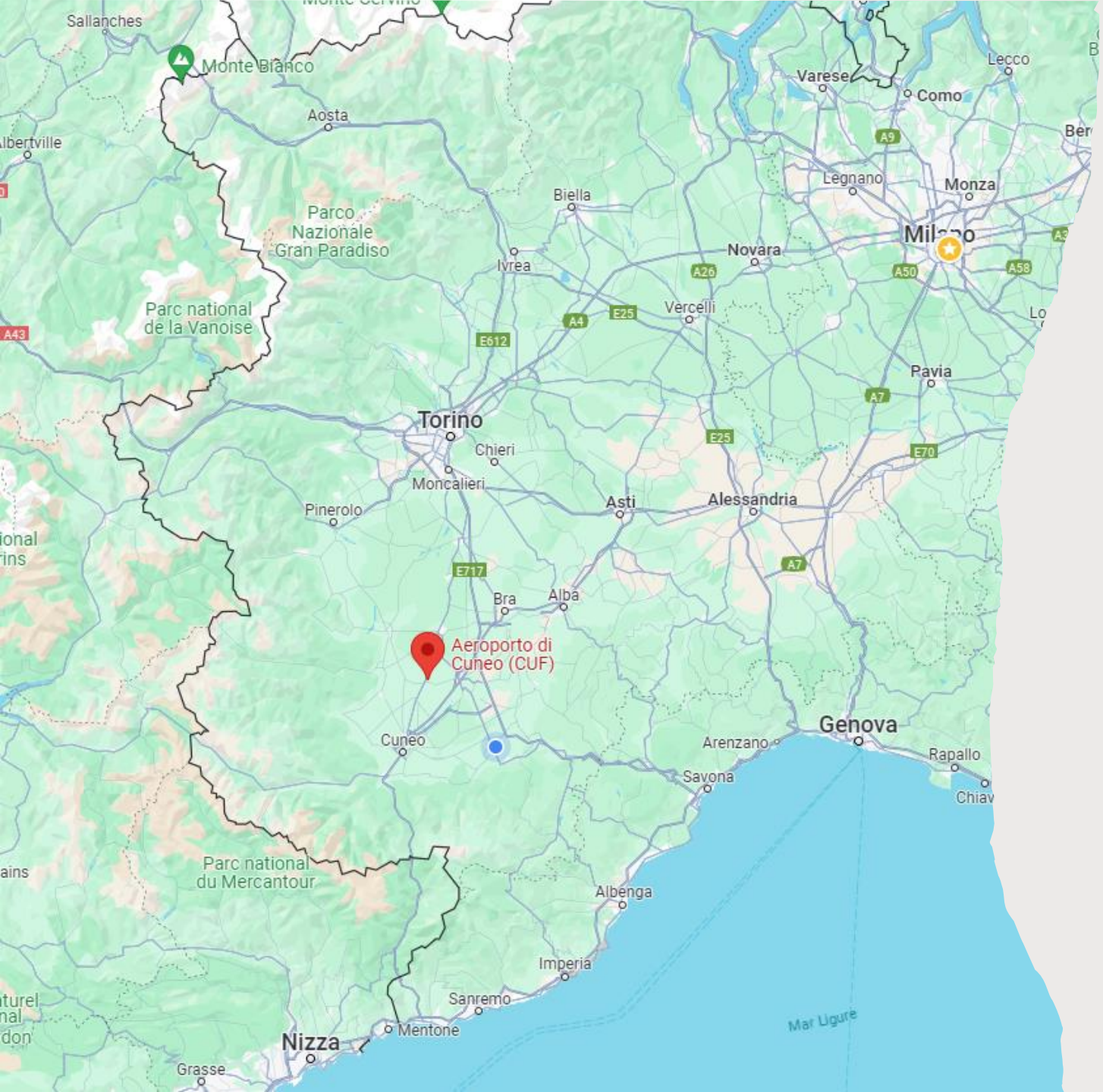


Automatic Atmospheric Radio Sounding System at Cuneo-Levaldigi (Italy)

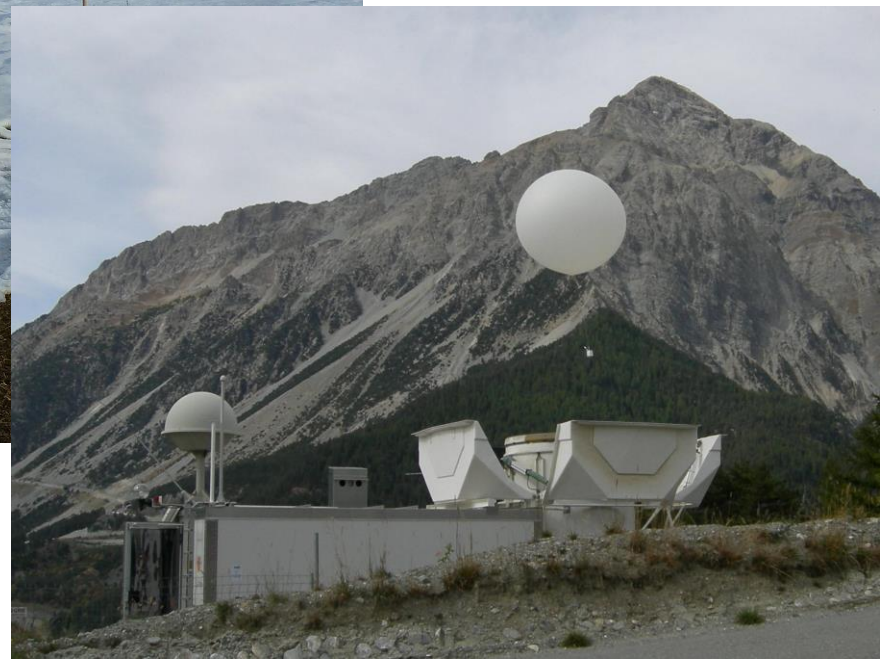
- https://www.arpa.piemonte.it/rischinaturali/tematismi/meteo/osservazioni/radiosondaggio/radiosondaggio.html

- https://www.arpa.piemonte.it/rischinaturali/approfondimenti/meteo/strumenti_di_osservazione/radiosondaggio.html

Automatic Atmospheric Radio Sounding System

- Automatic instrumentation capable of launching balloons into the atmosphere
- The radiosondes measure temperature, humidity, pressure, wind speed and direction, up to about 30 km above sea level
- system installed at Cuneo-Levaldigi airport (CN) since 1999
- In the past (until 2022) two daily launches – now one daily launch (at 00 in winter / 12 in summer)

Old installation of a second autosonde in Sansicario (for the Turin 2006 Olympic period and post-Olympic until 2015)

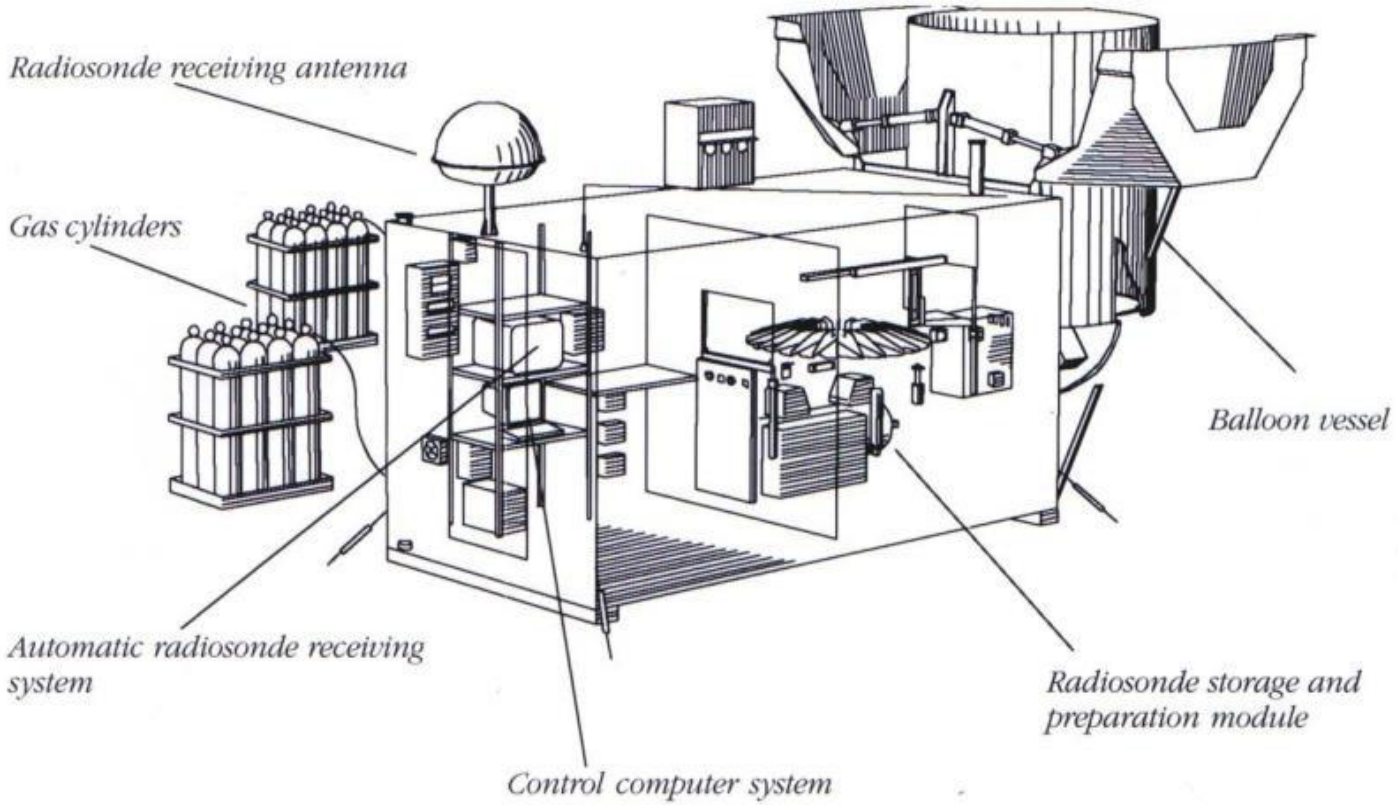


Automatic Atmospheric Radio Sounding System

Different type and generation of radiosondes

(from left to right: RS92-SGPW, RS92-SGPD, RS41-SG, RS41-SG EPS cover)

Technical drawing of VAISALA automatic radiosounding system



COMPONENTI DEL SISTEMA

Automatic Atmospheric Radio Sounding System

RS41-SG : temperature and humidity sensors, GPS for wind speed and direction, and for geopotential height

Data received using a UHF antenna

24 trays for sondes and balloons (12 or 24 days of autonomy)

Robotics controlled by compressed air system

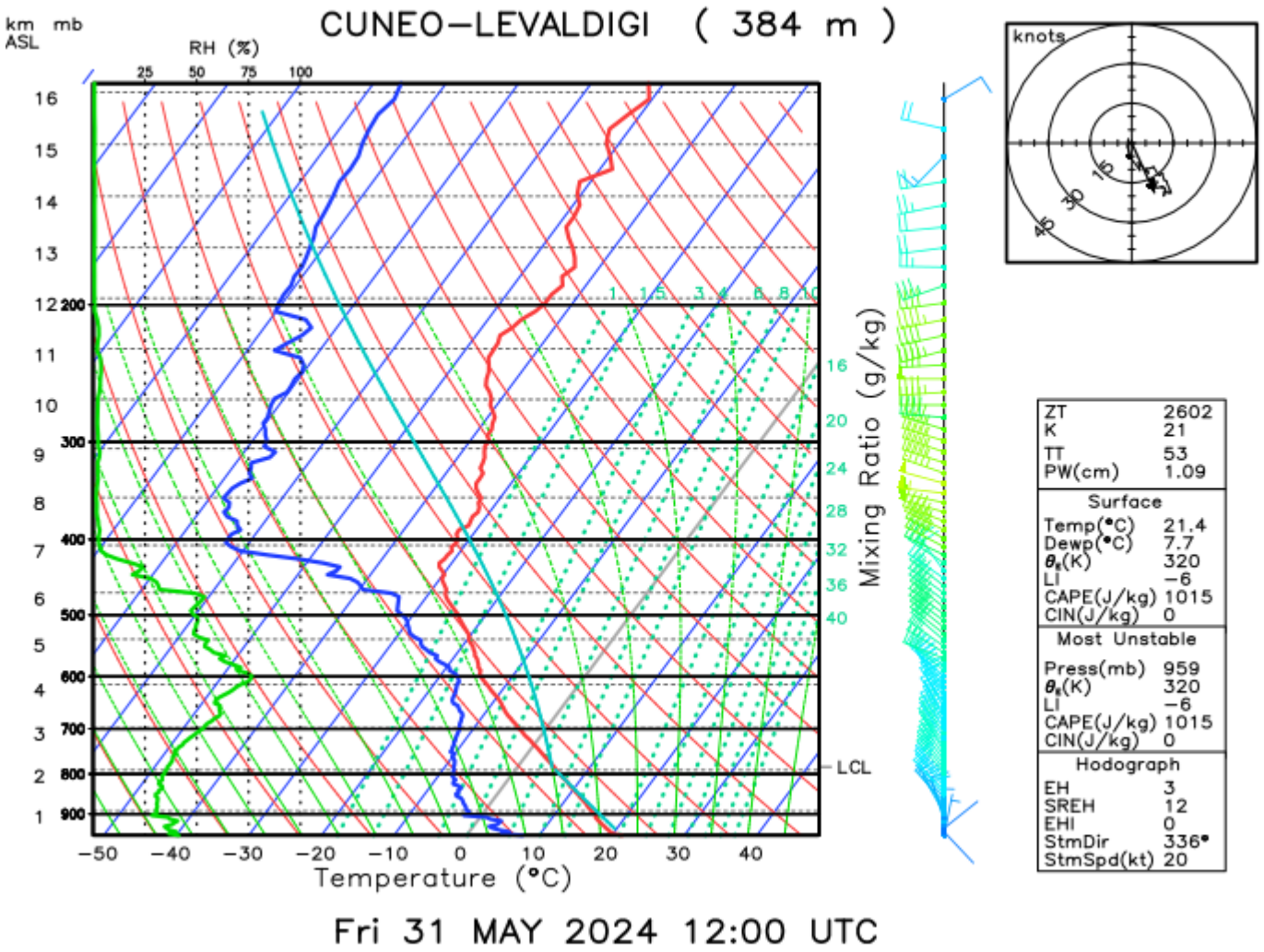
Operator room + robot room + balloon launcher

Sistema automatico di radiosondaggio atmosferico

Pallone con paracadute

Automatic Atmospheric Radio Sounding System

Example: diagram with data of 31/05/2024@1200 radiosounding



Skew-T diagram

Temperature, humidity, wet bulb graphs

Wind speed and direction

Weather and instability parameters calculated: ZT, K index, total totals, lifted index, CAPE, ……

Data used by weather forecasters, both during forecasting and analysis phase

Atmospheric studies: stability/instability conditions, thermal inversions, fog / smog