

Wind tunnel : Experimental site in natural conditions

Located at the summit of the puy de Dôme mountain (1465 m), the open wind tunnel is a unique site in France for observation in natural meteorological situations (cloudy conditions or not).

This open wind tunnel is designed for in-situ studies and characterization of aerosols and cloud particles.

Application fields

- Implementation of original methodologies of in-situ clouds and aerosol observations used for studies on cloud/chemistry/climate interactions.
- Applications with technological character : prototype tests and validation of airborne instruments.
- Industrial projects : aeronautics, buildings, textile tests,...

Cloudy conditions with supercooled clouds (icing) and ice crystals : from November to April.
Aerosol experiments : from May to October.

Services

- Visit of the facilities.
- Implementation of the necessary instrumentation for the experiment.
- Experiment and data acquisition.
- Data processing.
- Expertise report.

Facilities

- Wind tunnel with adjustable airflow up to 17 m³/s.
- Two alternate sampling sections according to the application :
 - 250 mm x 320 mm (0.6 m length), airspeed up to 120 m/s ;
 - 500 mm x 640 mm (2 m length), airspeed up to 52 m/s.
- Controlled parameters (airspeed, temperature, liquid water content, particles size diameter, ice crystals shape,...).



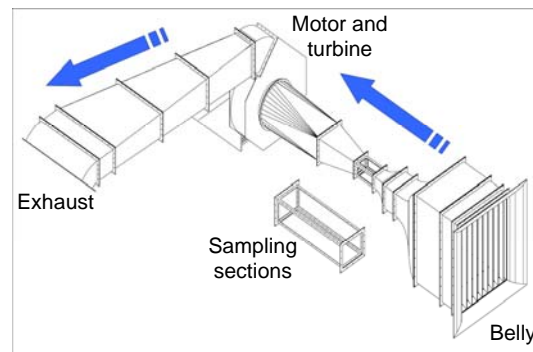
The puy de Dôme mountain.



Wind tunnel belly entrance at the Observatory.



Large sampling section (with airborne probes).



Wind tunnel diagram.

CONTACTS

Christophe GOURBEYRE
+33.4.73.40.78.24
C.Gourbeyre@opgc.univ-bpclermont.fr
Campus des Cézeaux - OPGC - LaMP
Aubière - FRANCE

Pascal PERSONNE
+33.4.70.02.20.73
Pascal.Personne@moniut.univ-bpclermont.fr
IUT GTE
Montluçon - FRANCE