

Contact:

Martin.Obligado@univ-grenoble-alpes.fr

muriel.lagauzere@univ-grenoble-alpes.fr

Soufflerie Lespnard

Research manager: Martin Obligado

Technical manager: Muriel Lagauzere

- The Lespnard wind tunnel is part of the large equipment available at LEGI
- It is a low-turbulence closed return wind tunnel with a measurement section of **0.75 m² and 4 m long**
- It can reach velocities up to **45m/s** with a turbulence level below **0.1%**
- It is compatible with static and active **grids** that can generate diverse types of turbulence

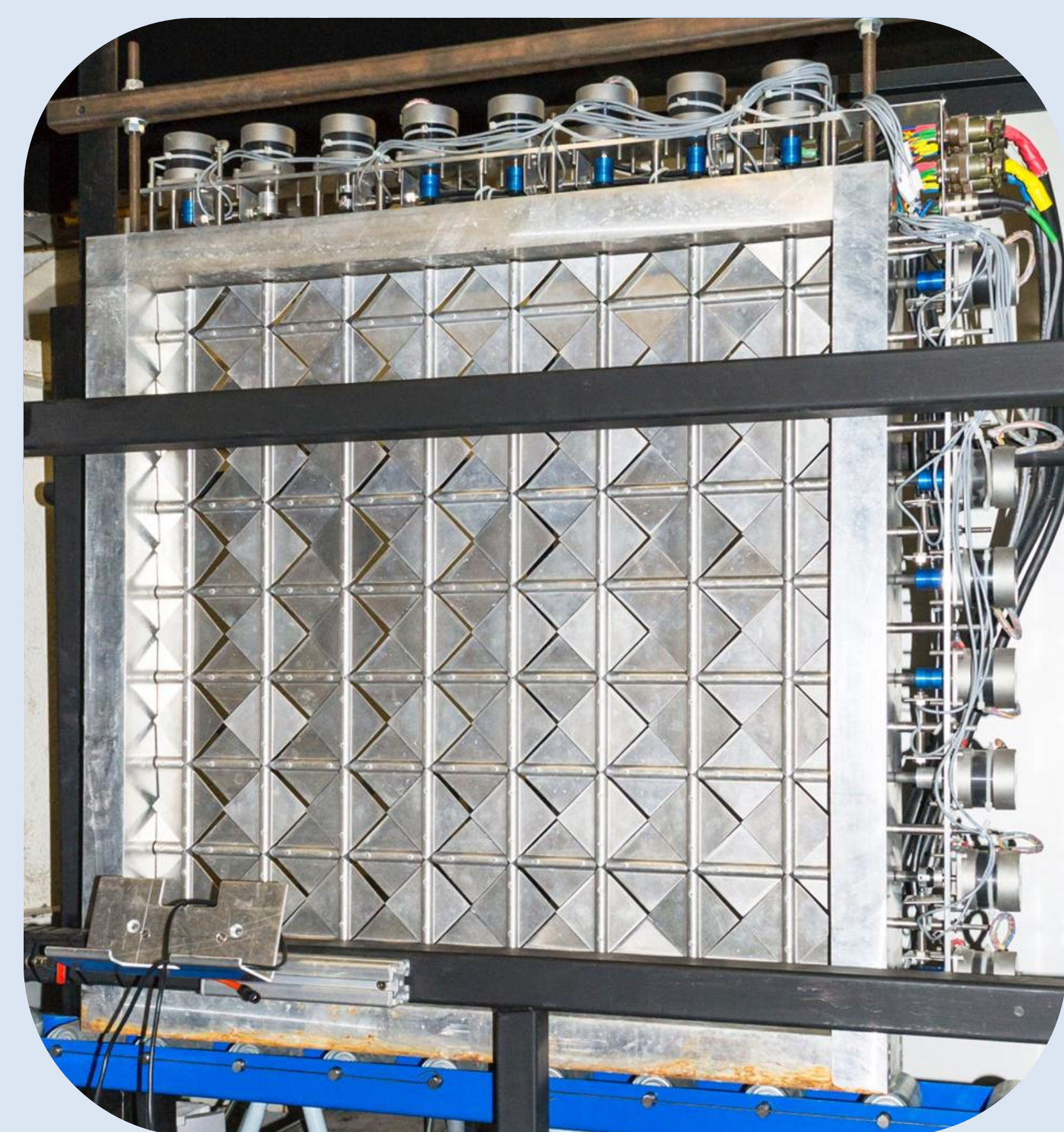


Some details...



- A 3D traverse system allows to displace a set of probes within all the extension of the measurement section
- A hot-wire anemometry system is available (streamline and DISA anemometers, compatibles with single and multiple wires)
- Velocity can also be measured/controlled with pitot tubes and a manometer Furness FCO560
- It can be used for two-phase flow studies (the motors are isolated from water droplets and humidity)
- Some of the experimental techniques that have been used are: high-speed imaging, particle imaging velocimetry (PIV), phase doppler interferometry (PDI), sonic anemometry, aerodynamic force sensors, among others

The active grid



- The active grid is composed by **16 bars** (8 horizontal and 8 vertical)
- Each bar is controlled independently by a motor
- Motors allow to control the velocity and direction of the blades

The active grid allows to produce bespoke turbulence: atmospheric boundary layer, high intensity homogeneous isotropic turbulence, unstationary turbulence, etc...

Laser safety



- All walls at the measurement section are transparent
- The area is protected by a leather cabin, allowing to use high power lasers for experiments