

DUAL-BEAM OPTICAL DISDROMETER

A device for measuring velocity and size distribution of rain drops with an extended measurement range to very small drops (0.1 mm)

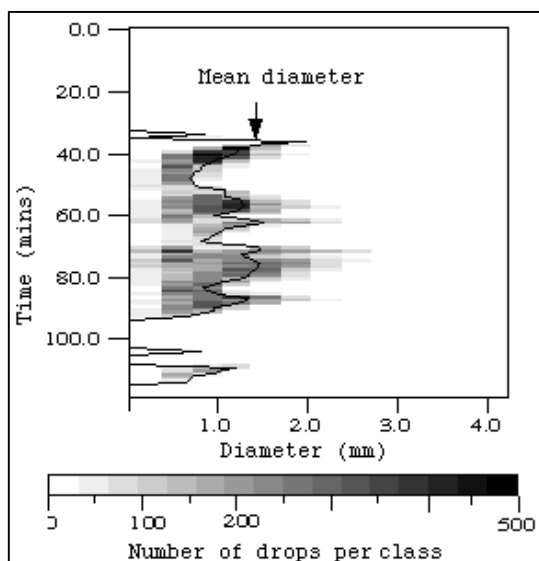
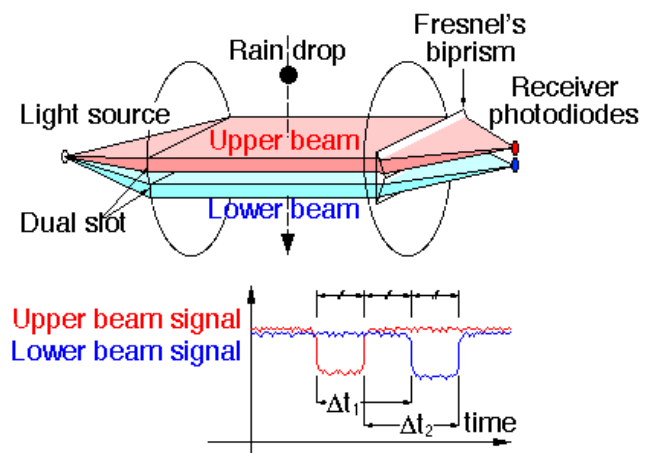


Presentation

The Cimel disdrometer is an innovative optical system for measuring all types of precipitation accurately and reliably. This system enables to measure the rate of precipitation and the distribution size of particles, has extensive measurement capabilities to measure very small drops (0.1 mm) and can be used for the calibration of rain gauges. This system has been developed in collaboration with the CETP research lab (CNRS patent).

An innovative design

The Cimel disdrometer uses an infrared LED that passes through a dual slot to generate a dual-collimated beam. After passing through the measurement area, the dual beam is focused on two photodiodes by a Fresnel biprism. A rain drop falling through the beams creates an intensity variations alternatively on each photodiodes.



Main features

- size and velocity distribution
- extended range of rain drops distribution
- calibration of rain gauges
- unattended operation
- maintenance free system

Output information

- Size of rain drops : at least 0.1 mm \pm 0.05 mm
- Velocity of rain drops : 0.1 to more than 20 m/s \pm 1%
- Diagram of precipitation size and velocity
- Time stamps : \pm 0.5 millisecond

