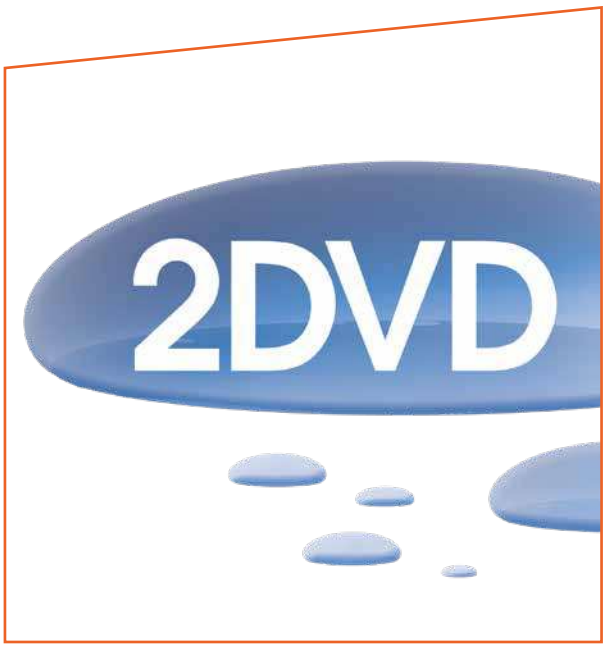
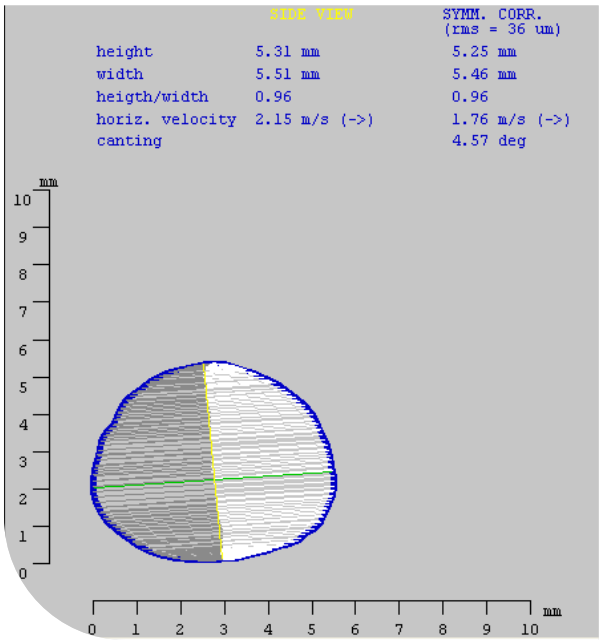
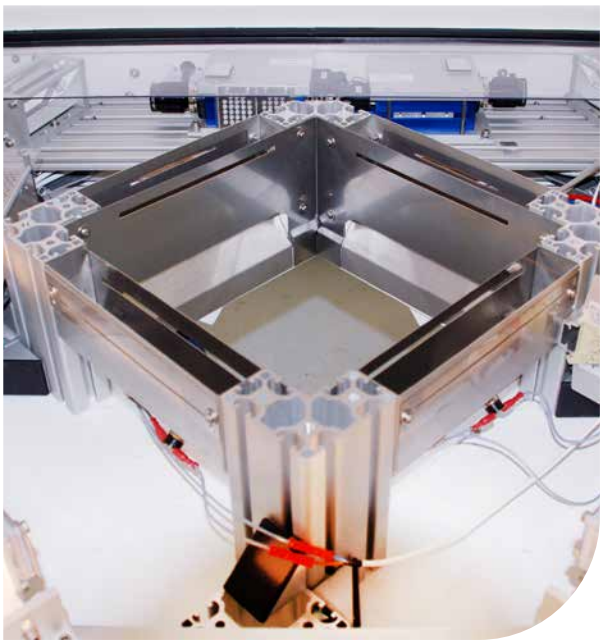
JOANNEUM RESEARCH DIGITAL

2D Video Distrometer

Beyond State-of-the-Art Precipitation Measurement







THE INNOVATION COMPANY

JOANNEUM RESEARCH DIGITAL

2D Video Distrometer

The Task

- Automated and permanent measurement of all precipitation particles and types
- Precipitation bulk parameters (rain rate, size distribution...)

Your Benefit

- Automatic recording and access to every single precipitation particle
- Assessment of individual precipitation phase contributions (solid, liquid, melted/frozen)

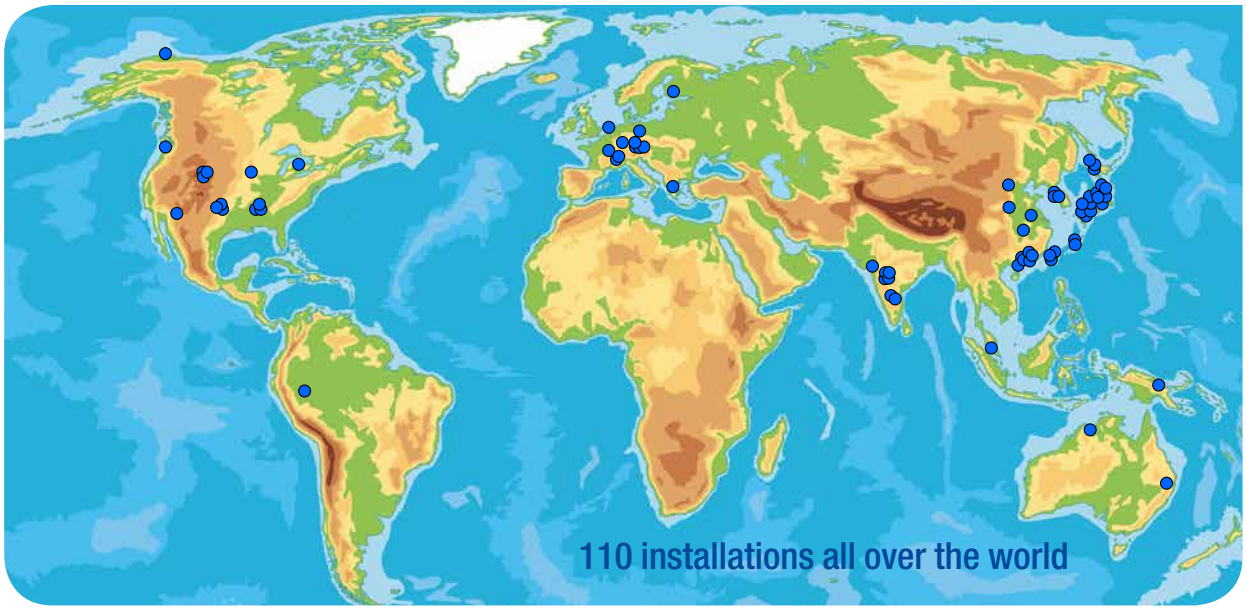
Capabilities

- Fall velocity, front and side view of every single particle
- Virtual top view of measurement area
- Optical resolution ~0.17 mm, no upper limit of particle size
- Time stamp with high resolution of ~18 µs

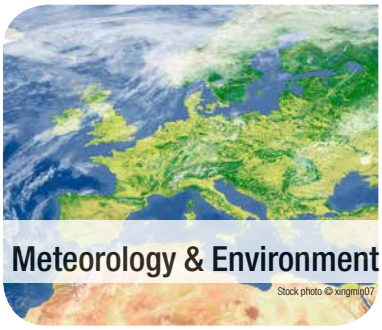
Analysis

- Canting angle
- Drop size and shape (3D reconstruction)
- Precipitation type assessment
- Open interface for user-defined models
- User-specific analysis on request

Our worldwide Customers



Customer Scenarios



- Adjustment of weather radar systems
- (Air) Traffic control
- Erosion of soil through raindrop impact
- Hydrological models for flood warning and water resource management

- Prediction of specific rain attenuation
- Explanation of tropospheric polarization rotation
- Propagation effects in mixed phase precipitation
- Input for propagation channel models

- Test of spray nozzles
- Measurement of artificial rain
- Efficiency of irrigation systems

Technical Details

The Outdoor Unit measures every single precipitation particle – i. e. rain drops, hailstones or snowflakes – from front and side with two high-speed cameras in real-time.
The Indoor Unit`s analysis PC gives detailed information about size, shape, state of aggregation, orientation and fall speed of each precipitation particle. Taking into account rain rate and accumulated amount of rain, these measurement data are the basis for a thorough understanding of atmospheric processes and precise prediction of the precipitation type´s impact on radio links and free-space optics. Software for data acquisition and analysis is included.

2DVD Specifications

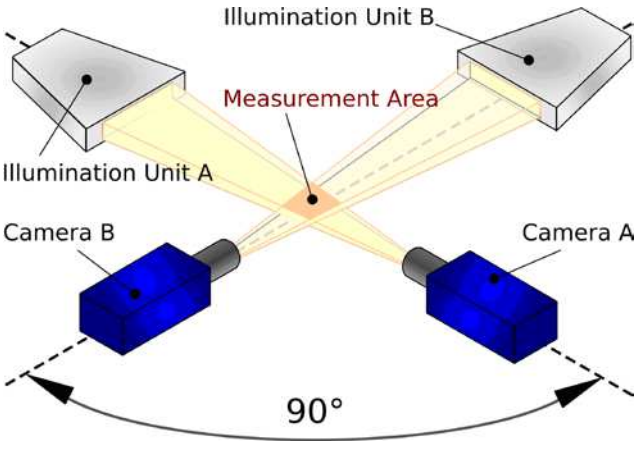
Resolution (vertical) better than 0.17 mm for veloc. < 10 m/s

Vertical velocity accuracy better than 4 % for veloc. < 10 m/s

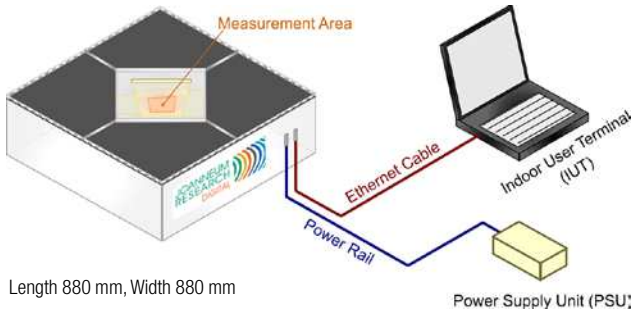
Sampling Area approx. 100 x 100 mm^2

Rain Rate compared to tipping bucket differences typically less than 10 %

Integration Time 15 sec. to 12 hours



standard notebook PC, 600 W power supply plus unit plus cabling



Length 880 mm, Width 880 mm

Height 250 mm, Weight 80 kg

Outdoor Unit

Indoor Unit

JOANNEUM RESEARCH DIGITAL

JOANNEUM RESEARCH

is a professional innovation and technology provider
with a long track record in cutting-edge research
at an international level.
The innovation company focuses on application oriented research
and development projects to promote technology transfer
to the economy.

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