

# LOM-Ice

## Development of a Laser Optical Measurement technique for the characterization of particle clouds in Icing wind tunnels

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## Kurzdarstellung der Konsortialpartner

- **Austrian Institute of Technology (AIT) (coord.)**
  - Austria's largest research organization
  - In LOM-Ice: Hybrid Electric Aircraft Technologies group
    - In-flight icing numerical and experimental activities
- **Rail Tec Arsenal (RTA)**
  - Research and testing institute in Vienna
  - Largest CWT in Europe
  - Testing rail/road vehicles, aircraft and technical systems

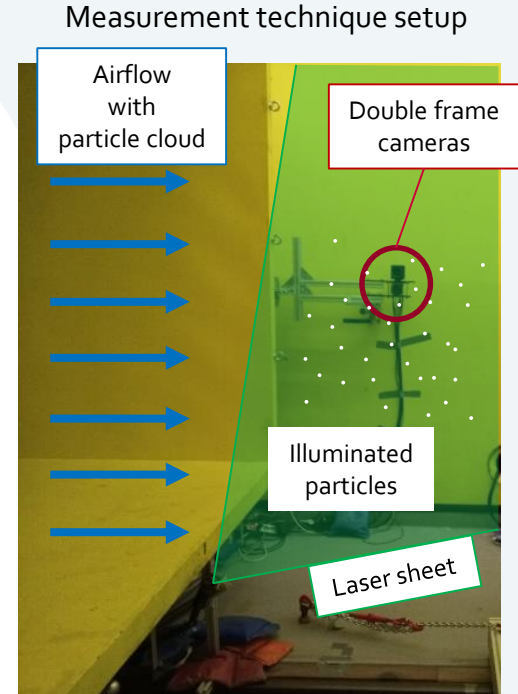


Pictures of RTA facility



## Ziel des Projekts

- Development and assessment of a **versatile laser optical measurement technique** for the characterization of **SLD and snow conditions** in IWT
- Targeted measurement technique **capabilities**:
  - Non-intrusive
  - Wide spatial range measurable
  - Wide particle size range measurable
  - PSD, shape, velocity, trajectory, LWC/TWC measurable

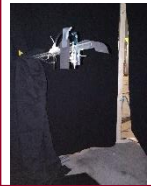


# Arbeitsplan/Zeitplan/Umsetzung

2021		2022									
Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.
M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11	M12

Simplified exp. for Technique testing & Parameters tuning

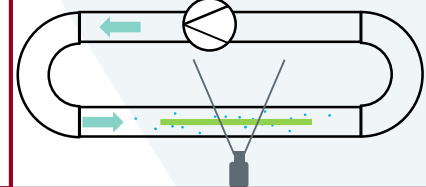
Water spray



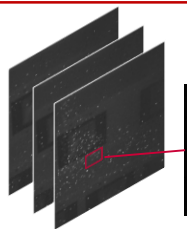
Water spray



Solid non-spherical particles



IWT tests



IWT tests Snow performed  
Data processing ongoing

IWT tests SLD



Image processing methods testing and development

## Angestrebte Verwertung

- Focus on both **SLD** and **ice crystals/snow** conditions
- Enable **detailed, quick and cost-effective** analysis of IWT particle clouds
- Support **IWT calibration** and verification of cloud **homogeneity**
- Potential exploitation for **cloud analysis around test objects** (non-intrusive)
- Potential exploitation for **validation of icing numerical models**
- Enhance **RTA's capabilities**
- Strengthen **competitiveness of Austrian RTOs** in icing and snow testing

## Kontakte

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