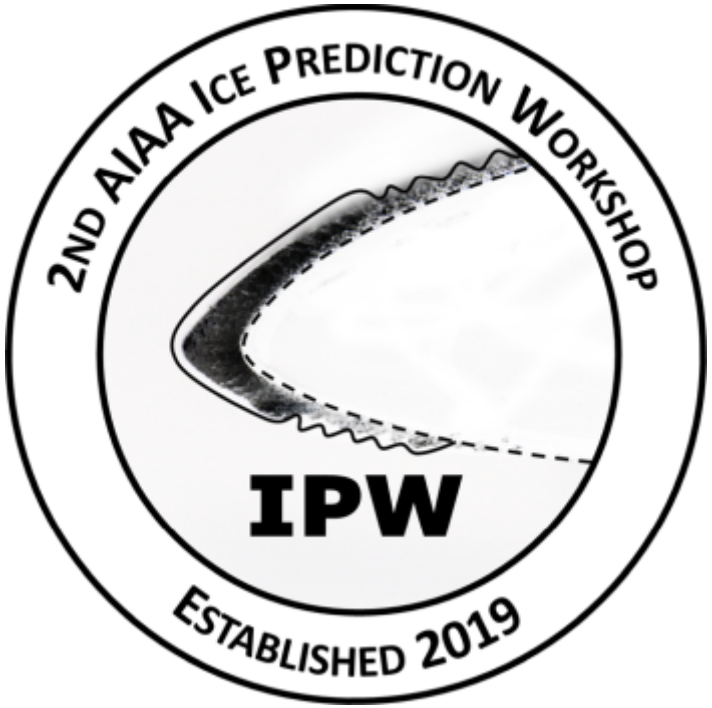


Public Database Development Opportunity

2nd Ice Prediction Workshop

Presenter: Richard Moser

Vienna, Austria

23.06.2023

AeroTex GmbH

Background

- The 3D-ICESIM project (funded by the Austrian government through the TAKE OFF initiative) has the following aims
  - Improved icing numerical simulation capability for 3D components
  - Development of experimental test methods
    - Collection Efficiency
    - Heat Transfer
    - 3D ice shape scans
  - **Generation of ice shape database for generic 3D geometry**

Project 3D-ICESIM has received funding from the Federal Ministry of Austria for Climate Action, Environment, Energy, Mobility, Innovation and Technology (BMK) as part of the Austrian Aeronautics Programme TAKE OFF via the Austrian Research Promotion Agency (FFG) under project number FO999894155.

3D Geometry Requirements

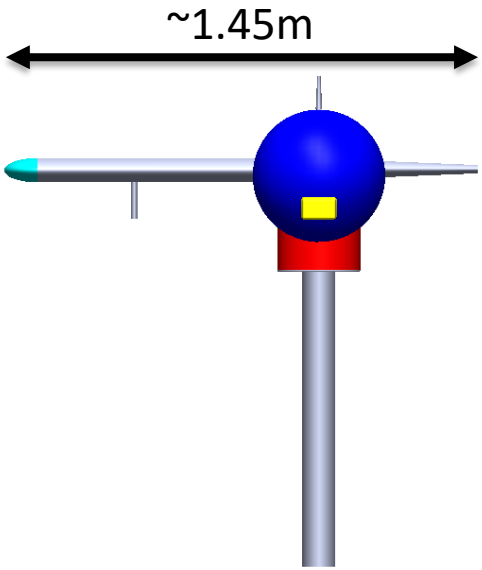
- Aim to maximise data capture for different shapes
- Inclusion of features to assess concentration / shadow regions
- Flexible model design to allow future testing with modified parts

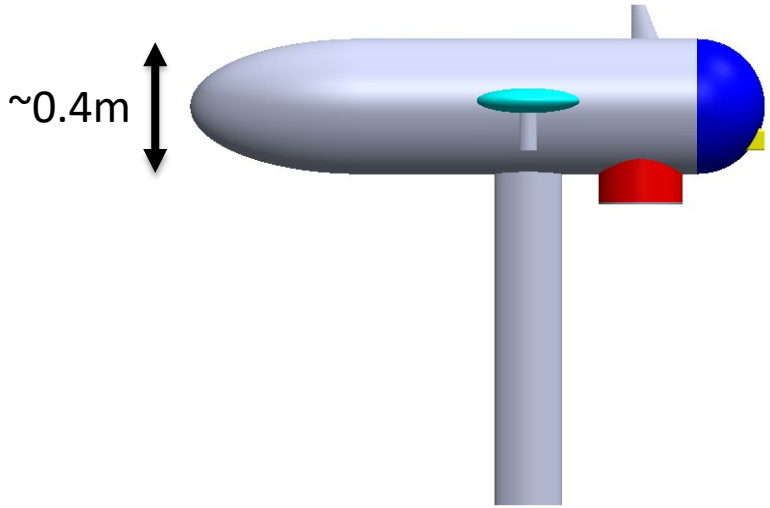
➢ Potential for use in future Ice Prediction Workshops

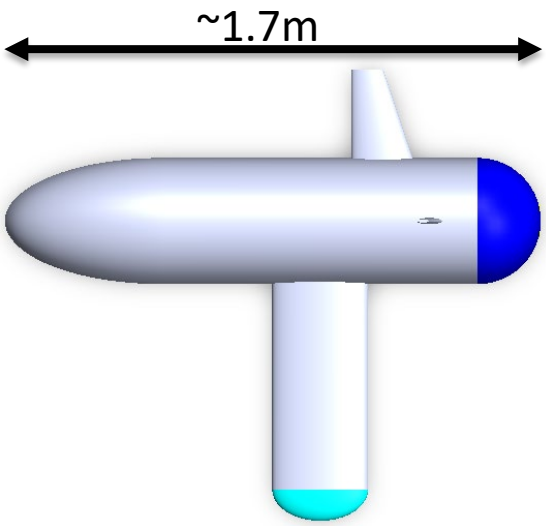
3D Geometry Proposal

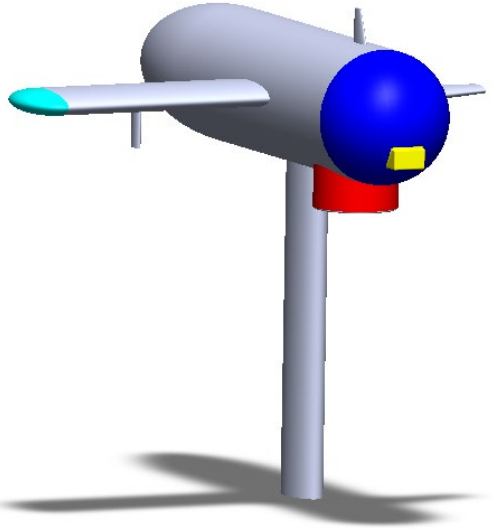
- An outline design of the 3D geometry has been performed
- Balance needed between desire for wide range of geometries and cost/complexity
- Input desired from the wider community to ensure that the geometry represents the most useful option for future use as code validation database

3D Geometry Proposal









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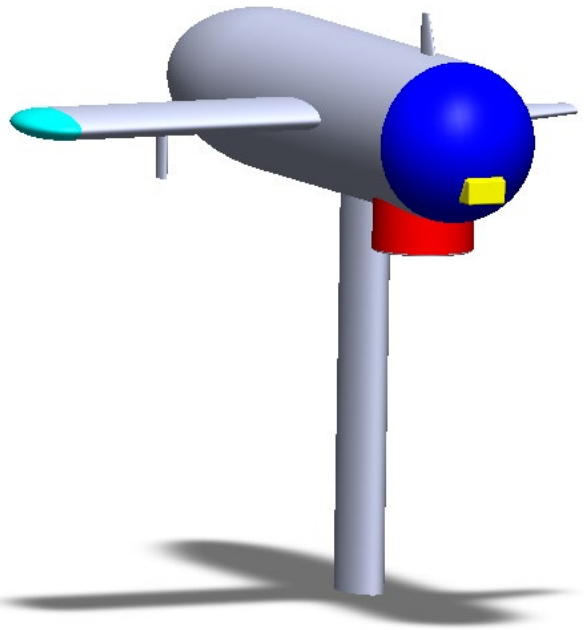
3D Geometry Proposal

- Basic geometry is in grey
- Coloured parts are intended to be replaceable
  - Light blue: wing tip
  - Dark blue: nose
  - Yellow: payload
  - Red: payload



Instrumentation

- Intended to include pressure tappings on parts of the geometry
  - Due to cost/complexity, number of tappings will be limited
  - This is not intended to be an aerodynamic quality model

Feedback

- Comments from any interested parties are very welcome!
- Please provide feedback to:
  - Richard Moser, richard.moser@aerotex.at