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Notes from IPW2 primer discussions

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Sponsored by the AIAA Atmospheric and Space Environments
Technical Committee (ASE TC)

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Comments from compiling all results

➢ Use a fixed Ks value for all participants

➢ Plotting freezing fraction was rendered less interesting due to lack of unified standard

➢ Some 300-page comparison compressed into some 100-page report, overwhelming amount of data at first but can be made more interesting after thorough review.

Comments from compiling 3D results

➢ CP (pressure coefficient) reference pressure should be clearly defined

  ➢ avoids matching experimental data through reverse engineering

➢ Multi-element slat was protected (heating) but not all participants knew

➢ Need for experimental ice density

➢ Turbulence model effects, especially roughness modifications, need to be clearly identified

  ➢ Fixed supplied mesh can be suboptimal for different turbulent models

➢ (after session comment) Explicitly indicate whether stripwise data can be used in the workshop.

  ➢ If so, split these from pure 3D data.

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Comments from compiling 2D results

➢ Rime effect spread appears wider than IPW1

    ➢ Perhaps lower Reynolds number or scale makes predictions more difficult?

➢ Explicit angle-of-attack changes to match CP

➢ Compare Min CCS, Max CCS and mean CCS results from CFD and experiments

    ➢ Perhaps compare Max Max CCS? (not a typo!)

➢ Examine mono vs poly dispersed cases

➢ Identify which models need improvements (flow, drop., thermo, accret., etc.)

➢ Explicit Far-Field or in-tunnel Boundary Conditions.

Comments after IPW2 presentations

➢ Any new thoughts?
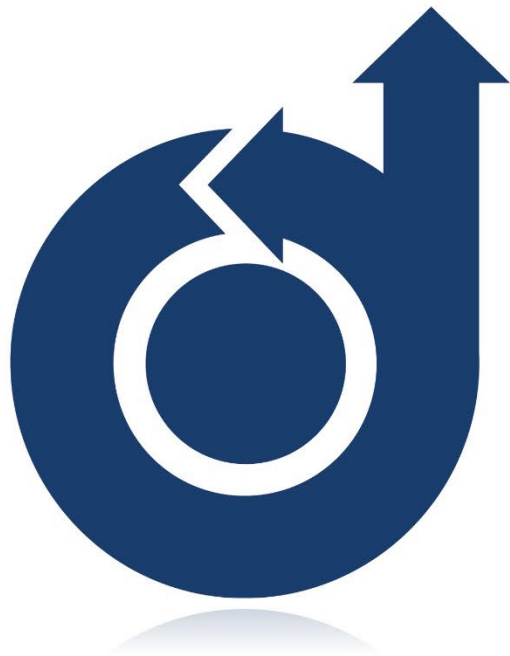
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