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CALCULATION-EXPERIMENTAL RESEARCH ON METHODICAL ISSUES OF ICE PROTECTION EFFICIENCY ESTIMATION OF PLANER'S ELEMENTS FROM THE IMPACT OF SLD ATMOSPHERIC CONDITIONS

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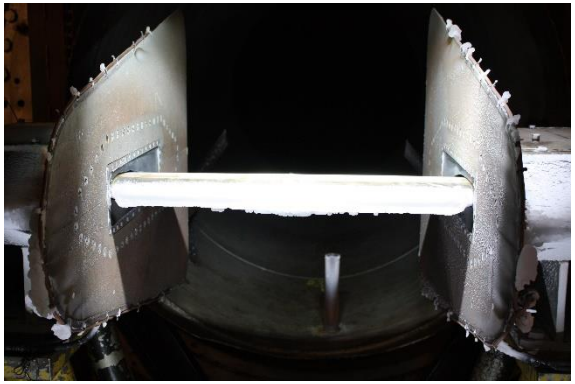
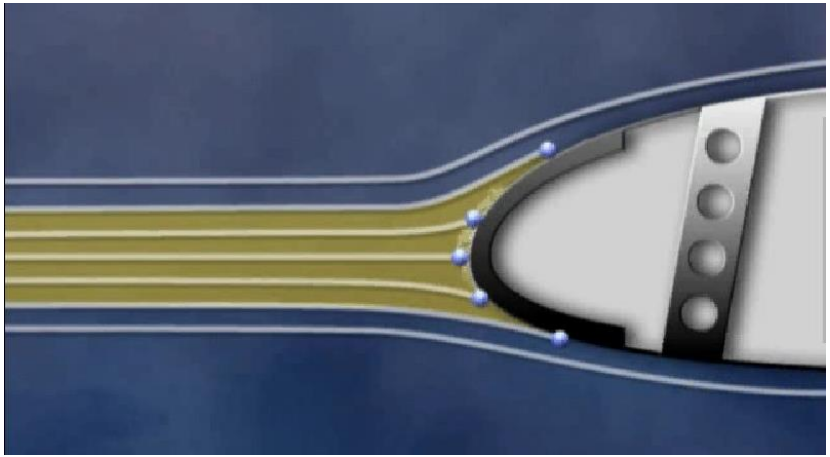
CIAM

CHECK ON THE GROUND IS A GUARANTEE OF SAFETY IN THE SKY…..

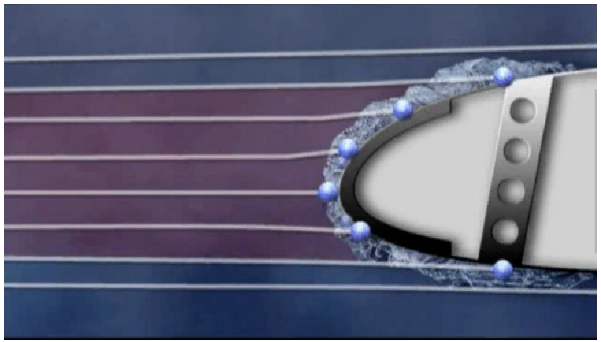


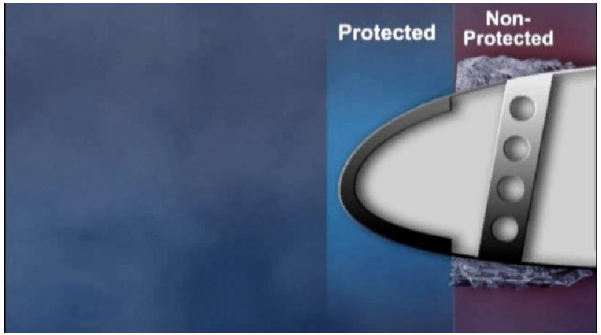
SLD CONDITIONS, THE MAIN PROBLEM

Appendix C



SLD (Appendix O)





REGULATORY REQUIREMENTS. APPENDIX O TO FAR-25

Freezing drizzle

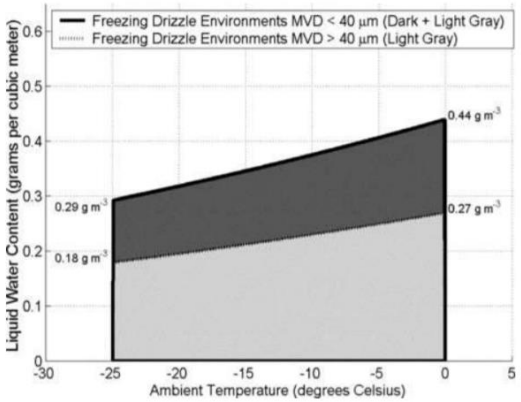
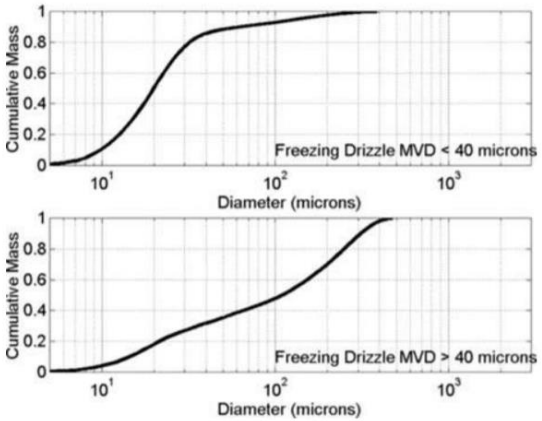
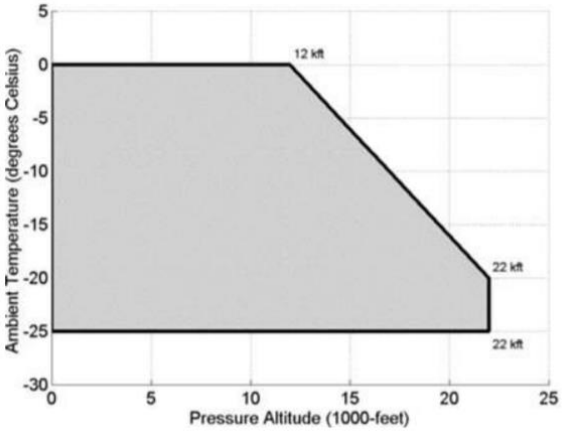


FIGURE 2 — Appendix O, Freezing Drizzle, Drop Diameter Distribution





REGULATORY REQUIREMENTS. APPENDIX O TO FAR-25

Freezing rain

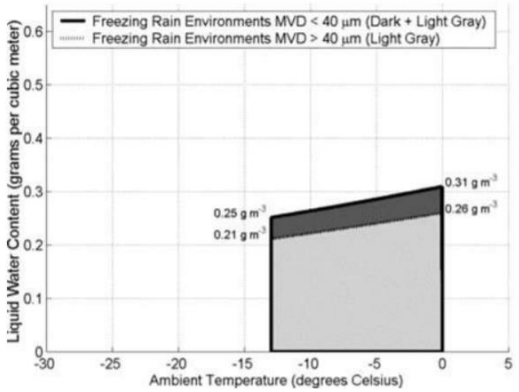
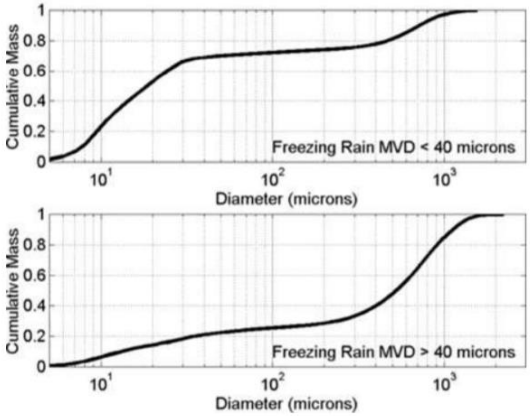
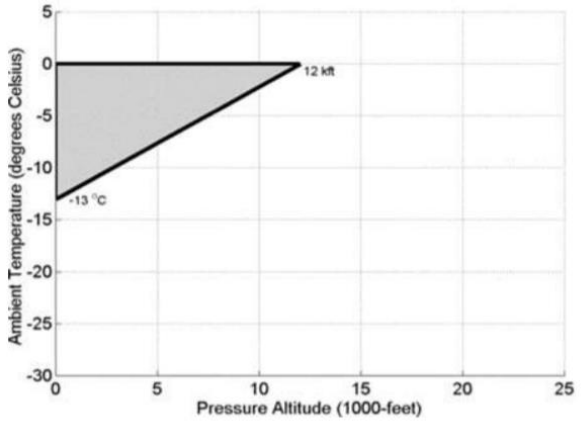


FIGURE 5 — Appendix O, Freezing Rain, Drop Diameter Distribution

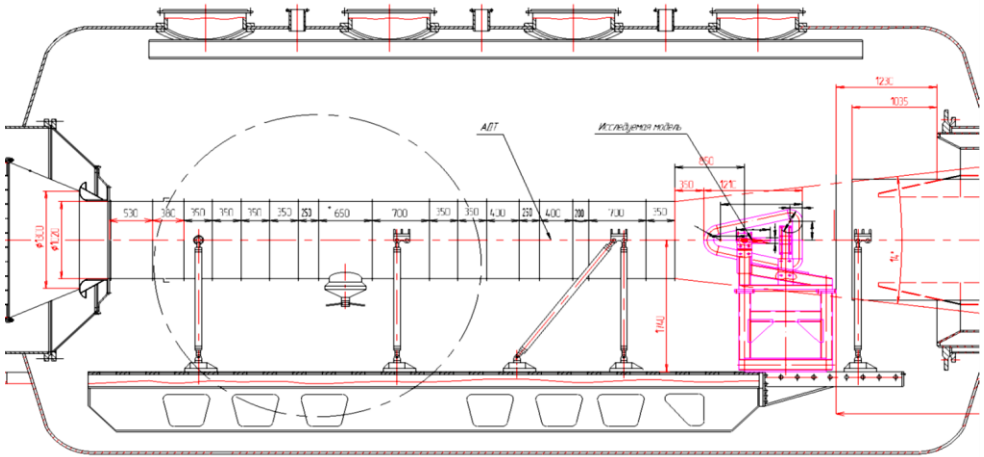




TEST EQUIPMENT

Key Characteristics:

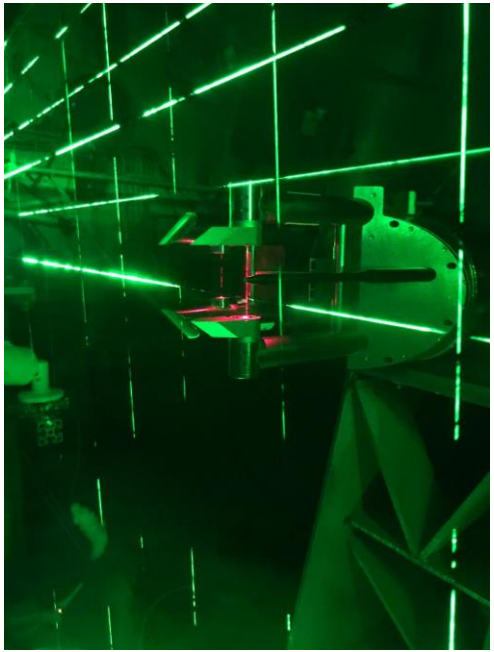
- Altitude 0….22 km
- Temperature -30…+10
- Flow rate 0….210 m/s
- Humidity 0…100%
- LWC 0…3 g/m3



General view of the C-2

EQUIPMENT FOR MEASURMENT SIZES OF DROPLETS

CCP

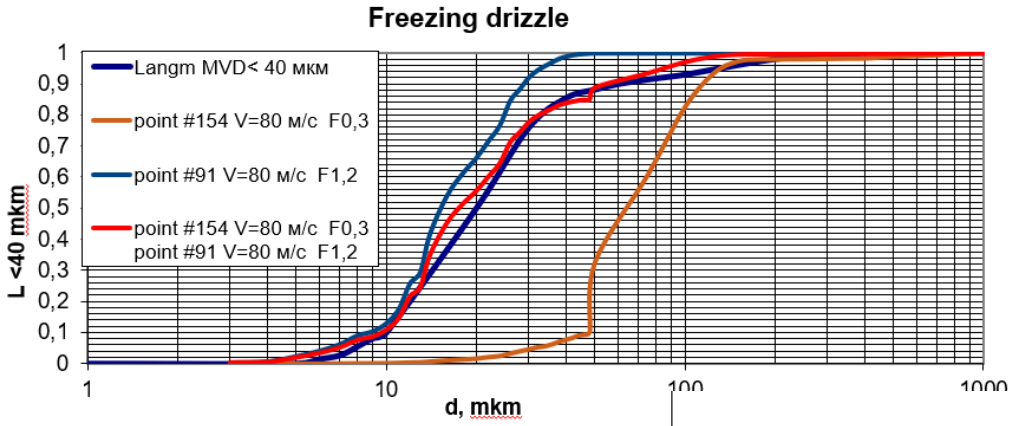


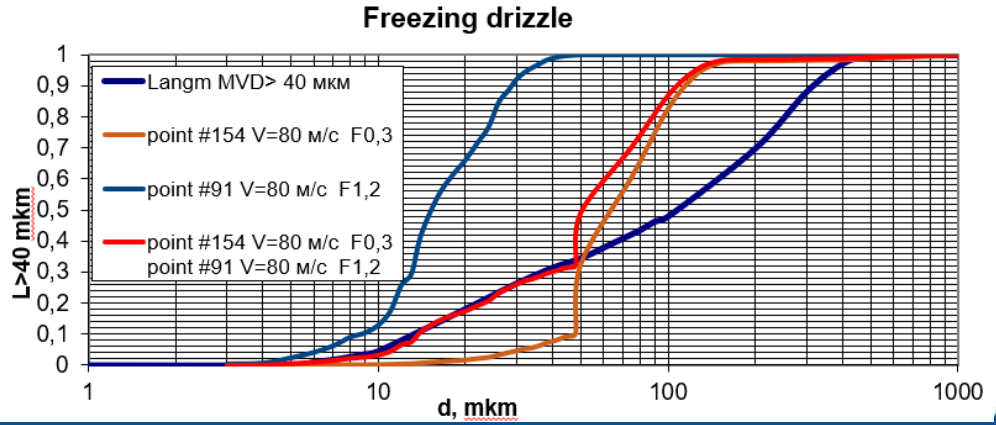
EQUIPMENT FOR MEASURMENT SIZES OF FROPLETS

Specifications

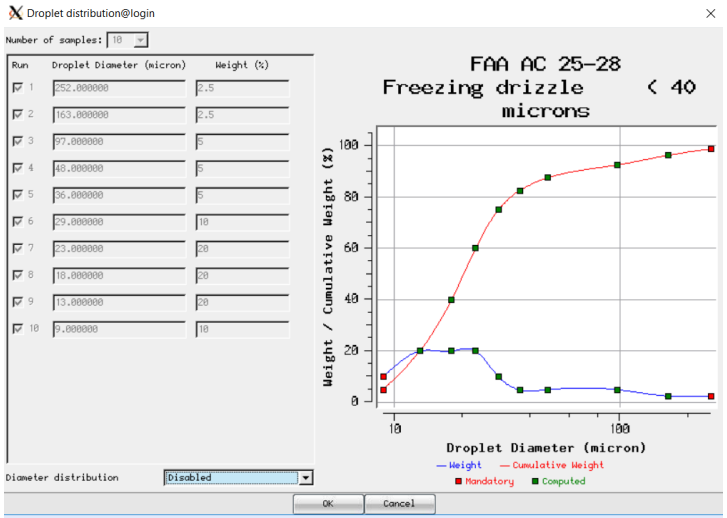
Parameter	CIP Specification	CDP Specification	LWC Specification
Technique	Optical Array Probe with 64 elements: 62 sizing elements, end diodes reject	Light-scattering probe with 30 size bins	Temperature-Controlled Hotwire Sensor
Measured Particle Size Range	12.5 µm – 1.55 mm (standard)	2 µm to 50 µm	N/A; measured LWC range is 0 - 3 g/m^3
Sample Area	Variable; depends on tip configuration and particle size	0.24 mm^2	N/A
Upper Concentration Range	Depends on particle size, but up to 500 particles/ cm^3 for a CIP with standard tips and arm width	2,000 particles/cm^3	3 g/m3
Air Speed Range	10 - 300 m/s for 25 µm resolution CIP; 10 - 180 m/s for 15 µm CIP	10 - 250 m/s	10 - 200 m/s

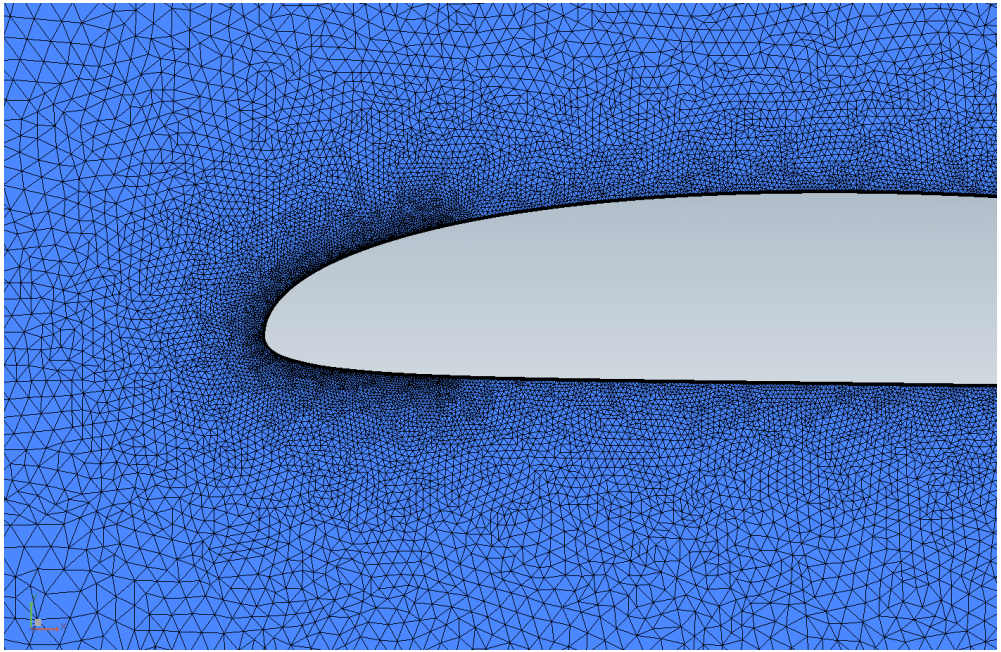
RESULT DISTRIBUTION





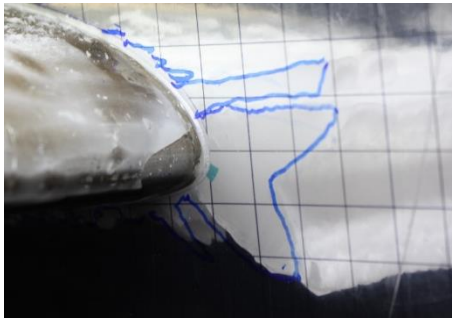
NUMERICAL SIMULATION



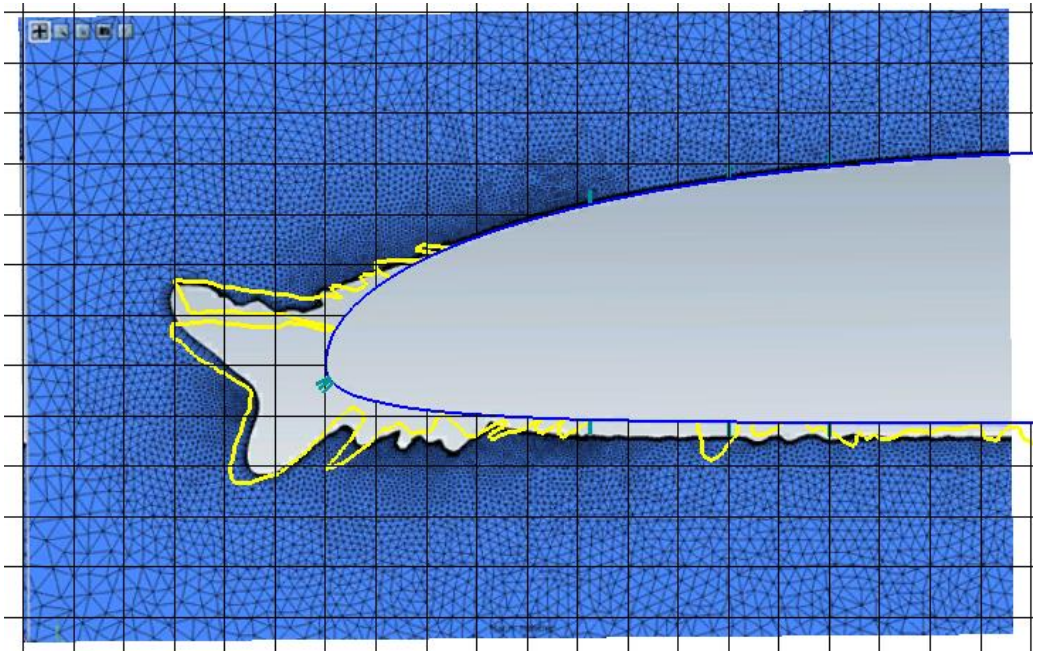


NUMERICAL SIMULATION AND VERIFICATION

EXPERIMENT



NUMERICAL SIMULATION



CONCLUSION

QUESTIONS???