

Appendix 3.4 – EXPERIMENTAL RESULTS FROM ONERA

by

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Chapter 20 is the ONERA experimental contribution to VFE-2 within AVT-113. The present appendix provides the numerical data files for all the results described in Chapter 20.

A3.4.1 STRUCTURE OF THE DATA

A3.4.1.1 General Configuration and Test Conditions

- Medium and sharp leading edges
- $M = 0.133$
- $Re_{mac} = 1$ million

A3.4.1.2 Specific Test Conditions

- Solid walls
- $-4^\circ \leq \alpha \leq 40^\circ$
- Model 1
 - Contents
 - Surface pressure distribution from PSI modules
 - Upper surface C_p distribution at chord station $\xi = 0.2, 0.4, 0.6, 0.8$
[File: Model_1_medium_upper](#)
 - Upper and lower surface C_p distributions at $\xi = 0.2, 0.4, 0.6, 0.8, 0.95$
[File: Model_1_sharp_upper](#)
[File: Model_1_sharp_lower](#)
- Solid walls
- $-9^\circ \leq \alpha \leq 40^\circ$
- Models 4 and 5
 - Contents:
 - Forces from a balance: C_N, C_A, C_m
 - Upper and lower pressure distribution from PSI modules (reduced number of taps)
[File: Models_4and5_solid_walls](#)

APPENDIX 3.4 – EXPERIMENTAL RESULTS FROM ONERA

- Open jet tunnel
- $0^\circ < \alpha < 34^\circ$
- Models 4 and 5
 - Contents:
 - Forces from a balance: C_N , C_A , C_m
 - Upper and lower pressure distribution from PSI modules (reduced number of taps)
[File: Models_4and5_open_jet_tunnel](#)
- Solid walls
- $\alpha = 24.7^\circ$
- Models 4 and 5
 - Contents:
 - Velocity vectors fields measured with Particle Image Velocity (Stereo PIV)
 - 3D velocity vectors in planes perpendicular to model axis at $\xi = 0.3, 0.4, 0.5, 0.6, 0.7$
[Files: s_p03, s_p04, s_p05, s_p06, s_p07](#)
[m_p03, m_p04, m_p05, m_p06, m_p07](#)
 - Velocity vectors fields measured with 2 components PIV in a plan parallel to the upper surface
[Files: 2c_sharp](#)
[2c_medium](#)

A more detailed description of the structure of PIV data is available in file [piv_read_me](#).