

S3Ch TRANSONIC WIND TUNNEL

An intermediate scale wind tunnel dedicated to research and innovation

Major applications: transonic wing, engine integration, air inlet, bluff body, anemometric probes

Research: laminar flow, unsteady high speed flows, aeroelasticity, flow control, stability, experimental / numerical hybridation

Adaptive upper and lower walls for minimized wall interferences

MAIN FEATURES

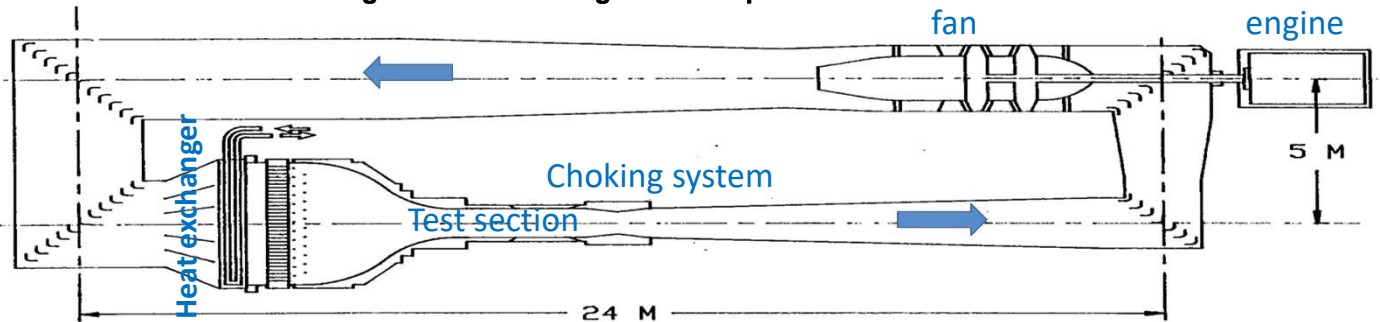
Continuous wind tunnel, atmospheric conditions : Mach range 0.1 to 1.3

High Mach stability thanks to 2nd throat in transonic regime

Test section 804mm (width) x 764mm (height) x 2200mm (length)

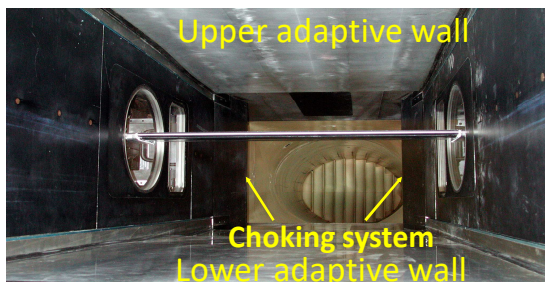
Adaptive walls

Fan 3500 KVA and heat exchanger to stabilize stagnation temperature between 300 and 320K



MAIN TEST RIGS

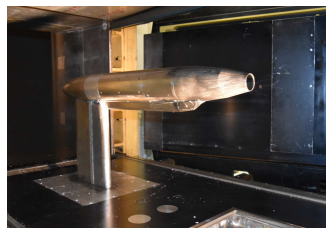
Airfoil mounted in between side walls
Hard and Elastic Mount



Air inlet installed
on a rotative arm



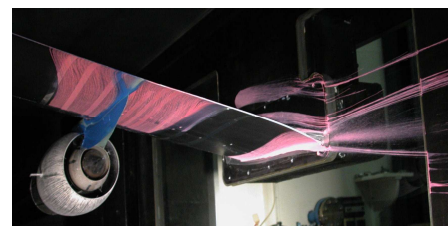
Nozzle flow



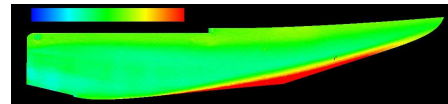
MAIN MEASUREMENT CAPABILITIES

Onboard miniature pressure sensors

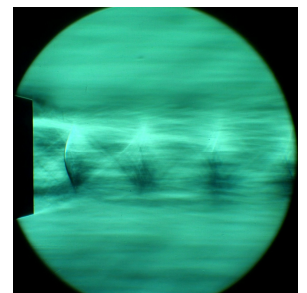
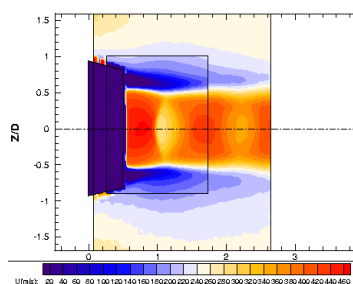
Oil flow visualizations



Pressure and Temperature Sensitive
Paint



PIV, LDV and Schlieren



CONTACT

<https://www.onera.fr/en/daaa/contact>