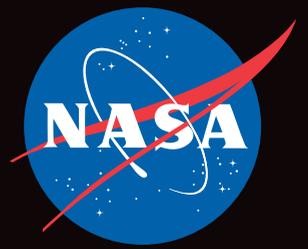
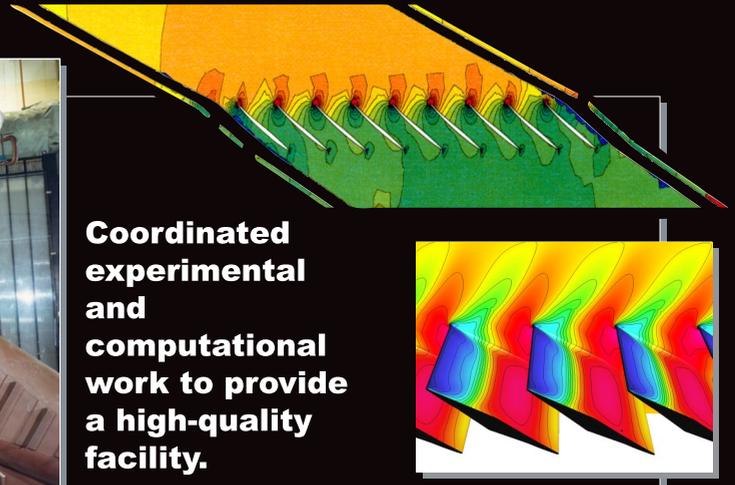


Transonic Flutter Cascade



The NASA transonic flutter cascade is a unique wind tunnel used to test fan blades in transonic flows. Blades can be oscillated mechanically to simulate stall-flutter conditions. High response pressure measurements provide data for validating aeroelastic prediction methods.



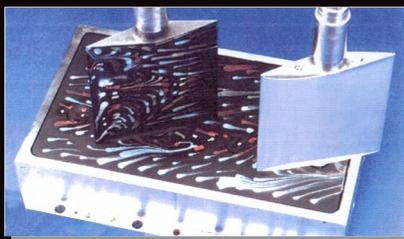
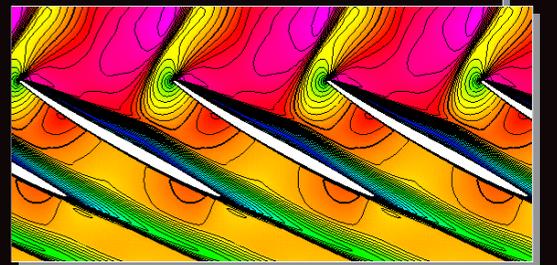
Coordinated experimental and computational work to provide a high-quality facility.

Blade shapes

Experimental shadowgraph

Experimental wall pressure made with pressure-sensitive paint

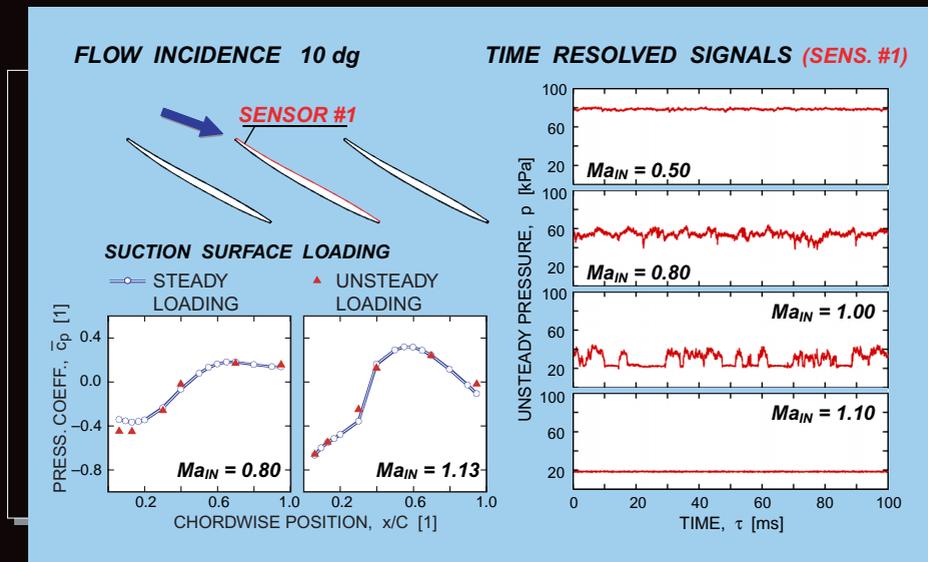
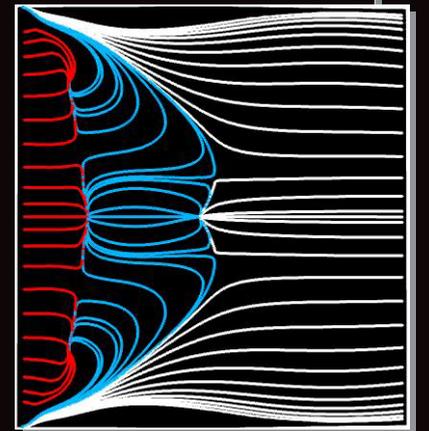
Transonic fan blades



Integrated testing and analysis to study flow physics.



Bow shock at 0.32 °C
Reattachment at 0.62 °C



High-fidelity measurements to study aeroelasticity.

Smart Engine Components