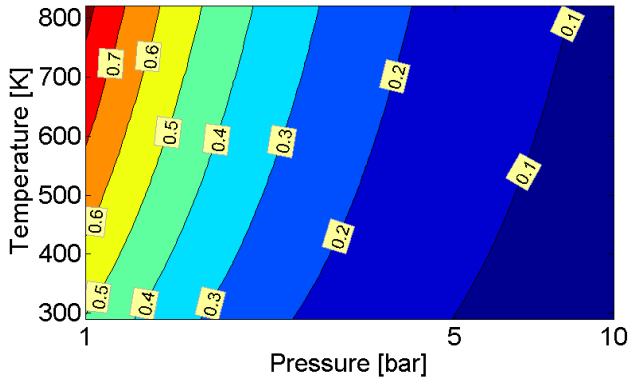


max. temperature of the grazing flow	800 K
max. pressure	10 bar
frequency range	160 – 2800 Hz
max. total mass flow rate	0.78 kg/s
Mach number (see figure below)	0 – 0.7
duct diameter	70 mm
high accuracy: error of damping results	< 3%



Mach number distribution of the HAT facility



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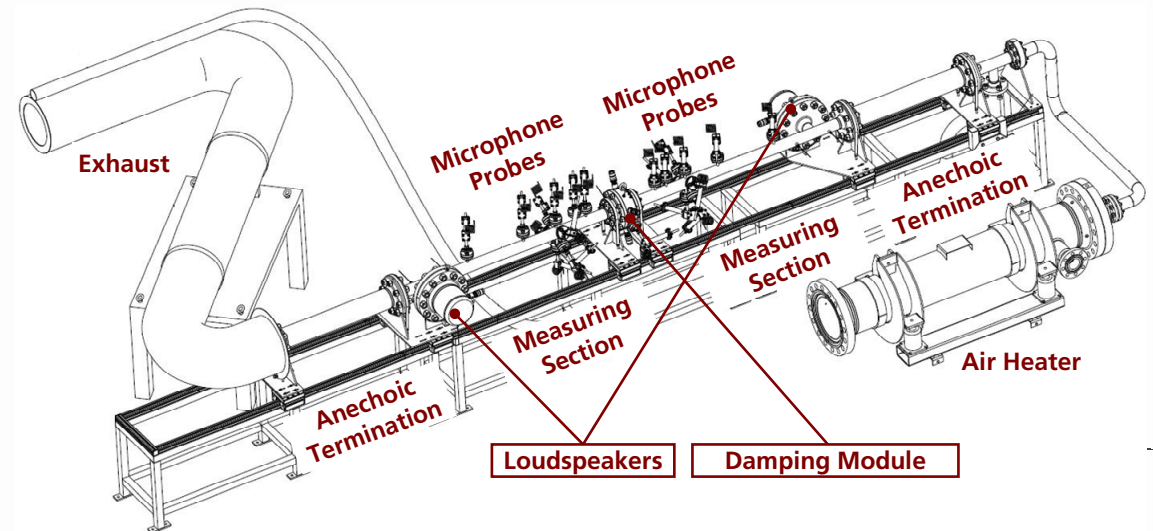


A Unique Test Facility

- For acoustic and aero-thermal research on liner and other thermally stressed surfaces in aero-engines under steady and unsteady conditions
- A worldwide unique test facility for high accuracy measurements in controlled high pressure and / or high temperature environments including secondary cooling flows
- Very modular setup providing the possibility for flexible modifications and extensions
- Cooperation between TU Berlin and DLR

Research Opportunities

- Acoustic characteristics (dissipation, reflection, transmission) of liner samples under realistic engine conditions
- Investigation of the liner surface heat transfer and flow-wall interaction under unsteady flow conditions (square cross section liner module with 3-way-optical access)
- Sound generation and transmission in a strongly accelerated flow (combustion chamber – turbine interaction; direct and indirect combustion noise; nozzle module up to choked conditions)
- Novel concepts for rotor-stator sealing in non-uniform main flow conditions



Setup of the HAT facility

