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JISFA4#4 - Multimodal characterisation of acoustic liners using MAINE Flow facility

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MAINE Flow (for Multimodal Acoustic ImpedaNce Eduction with Flow) is a large-scale duct that allows investigating the acoustic properties of liners with flow and acoustic conditions typically found in nacelles of aircraft engines: the incident acoustic level can go up to 150 dB and the flow velocity up to Mach 0.6. Compared to other large-scale experiments, this facility permits a precise control of the modal content and amplitude, as well as the measurement of the scattering matrix of the liner. In this presentation, we will describe the several methods that have been developed to permit these measurements, including inverse and direct impedance eduction. Results on different liner technologies will be displayed and compared against measurements of the same acoustic treatments using smaller facilities. Finally, flow and modal content effects will be studied and discussed.

Presenter(s) : T. HUMBERT (Laboratoire d'Acoustique de l'Université du Mans (LAUM), UMR CNRS 6613, Institut d'Acoustique - Graduate School (IA-GS), Le Mans Université); J. GOLLIARD (CTTM)

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