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Development of reduced drag concepts for acoustic liners using experimental methods CHRISTOPHER JASINSKI, Univ of Notre Dame, THOMAS CORKE, Notre Dame — Commercial aircraft have used acoustic liners to reduce engine noise for many years, although their drag production has been largely unstudied. The next generation of aircraft may benefit from additional surface area covered by acoustic liner, thus understanding their drag production mechanism is crucial for future designs. An accurate direct aerodynamic drag measurement technique has been developed using a force balance with linear air bearings. Using 3D-printed and conventional liners, low-drag designs are being developed. This paper will investigate the underlying fluid mechanics governing the drag production in acoustic liners and describe new attempts to reduce aerodynamic drag.

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