# BATMAN:Test cases

From VKI Internal wiki

Trailing-edge noise of CD-valeo profile

Controlled-Diffusion airfoils are a class of cambered airfoils that employ specific characteristics to carefully control the boundary-layer growth on the airfoil surface, and are typically used in modern high-speed compressors and low-speed ventilators. The present profile corresponds to the mid-span section of the H380EC1 fan blade. It has a 4% relative thickness and a camber angle of 12º. The airfoil chord length is C=0.1356m. It is set at a geometrical angle of attack of $alpha_w$=8º. The reference velocity is $U_0$ = 30m/s, defining a Reynolds number based on the airfoil chord length $Re\_C=2.8x10^5$. The sound radiated is mainly coming from trailing-edge due to the boundary-layer developing along the airfoil profile and being scattered at trailing-edge. The sound computation uses CFD RANS flow computation performed on OpenFoam (http://www.openfoam.com/).

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