## عنوان مقاله:

the impacts of reynolds number on the accuracy of two different turbulence models for acoustic results of an airfoil

## محل انتشار:

سومین کنفرانس بین المللی آکوستیک و ارتعاشات (سال: 1392)

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## خلاصه مقاله:

This research is based on calculating the trailing edge noise production for a NACA 0012 air-foil with two turbulence models at three velocities. The method uses the Ffowcs Williams and Hawkings (FW-H) to generate acoustic data in order to plot the semi-logarithmic Sound Pressure Level (SPL) vs. Frequency. The report compares two different turbulence models, such as realizable k-ε and Transition-SST to approach an appropriate approximation for Turbulent-Boundary-Layer-Trailing-Edge noise (TBL-TE)—dominated in the NACA 0012 air-foil noise production –and Aeroacoustic results. Research considered the acoustic errors to analyse the accuracy of each models. The range of Reynolds numbers based on velocities varies from low to moderate for the unsteady flow. The resulting spectra are in fair agreement with the experimental data for frequency above 400 Hz.

## کلمات کلیدی:

Acoustic; FW-H; Sound Pressure Level; Turbulence; TBL-TE