Camber Effects

In the following simulations, the effect of camber on the produced lift spectrum is studied. As was with the previous cases, a vortex of strength Γ = -0.02 was started upstream at an initial position of (-4.5, 0.06). While there are no analytical functions that allow us to compare the effects of camber on the lift spectrum, previous work by Martinez [1] provide some sort of comparison for trend prediction.

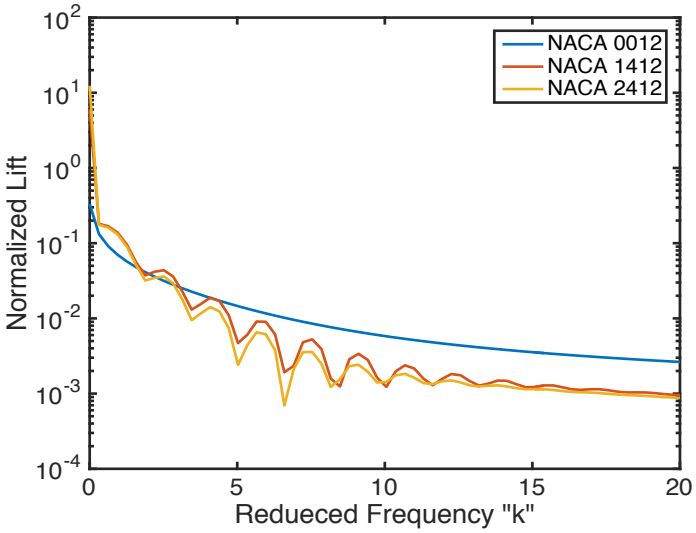

Figure 1: Effect of Camber on Lift Spectrum

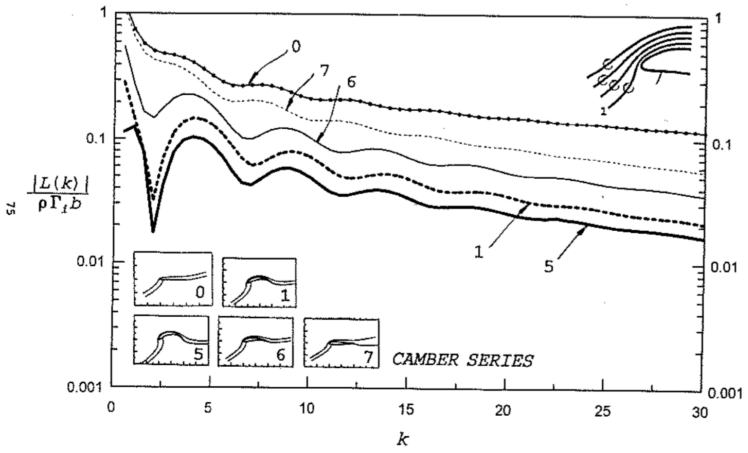

Figure 2: Results of Martinez [1] showing effects of camber

Comparing the two figures, the predicted response values for the current method are smaller than those predicted in [1]. The pattern though seems to be the same with increasing camber of the airfoils resulting in a progressively smaller response.

[1] Martinez R. Rudzinsky J. and Atassi H. M. Analytic Evaluation of Shape Effects on Blade Vortex Interaction Dec. 1997.