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Calculation and optimization of aerodynamic characteristics of airfoils with jet blowing in the presence of vortex in the flow

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Abstract

© 2016, Allerton Press, Inc. We consider the problem of calculating the ideal non-compressible fluid flow around the airfoil with jet blowing through a channel in the presence of a point vortex with a given circulation in the flow. The effect of the vortex coordinates on the aerodynamic characteristics of the airfoil is investigated and the optimal position of the vortex for maximal lift is found.

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Keywords

airfoil, blowing, jet stream, optimization, point vortex