A method for constructing an airfoil using a specified chord velocity diagram

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Abstract

A problem of determining a shape of the airfoil being streamlined by a potential incompressible inviscid flow is solved by the successive approximation method using a specified chord velocity diagram. It is shown that a closed airfoil that possesses a specified chord velocity diagram can be constructed with a sufficient accuracy; if the chord diagram is unsuccessfully specified, the closed airfoil may prove to be not univalent, that is, physically unrealizable. © 2009 Allerton Press, Inc.

Keywords

Airfoil, Chord diagram, Flow velocity