

# A Non-Iterative Transformation Method for an Extended Blasius Problem

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## Abstract

In this paper, we define a non-iterative transformation method for an Extended Blasius Problem. The original non-iterative transformation method, which is based on scaling invariance properties, was defined for the classical Blasius problem by T\”opfer in 1912. This method allows us to solve numerically a boundary value problem by solving a related initial value problem and then rescaling the obtained numerical solution. In recent years, we have seen applications of the non-iterative transformation method to several problems of interest. The obtained numerical results are improved by both a mesh refinement strategy and Richardson’s extrapolation technique. In this way, we can be confident that the computed six decimal places are correct.

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