

A “DISCRETIZATION” TECHNIQUE FOR THE SOLUTION OF ODEs II

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□ *A functional analytic technique was recently presented for finding discrete equivalent counterparts of initial value problems of ODEs and obtaining their real analytic solutions. In the current paper, this technique is extended to boundary value problems of ODEs and to the complex solutions of ODEs. In order to demonstrate this technique, it is applied to the classic Blasius problem of fluid mechanics. Apart from its real solution, its complex solution is also studied. The obtained results indicate that the complex Blasius function exhibits an oscillatory behavior and strengthen a conjecture regarding its singularities in the complex plane.*

Keywords Analytic structure; Blasius; Complex solution; Functional-analytic method; Singularities.

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