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A reliable algorithm for solving boundary value problems for higher-order integro-differentiable equations. (English) Zbl 1023.65150

Summary: The aim of this paper is to present an efficient analytical and numerical procedure for solving boundary value problems for higher-order integro-differential equations. The modified form of Adomian decomposition method is found to be fast and accurate. The analysis is accompanied by numerical examples. The results demonstrate reliability and efficiency of the proposed algorithm.

MSC:
65R20 Numerical methods for integral equations
45G10 Other nonlinear integral equations
45J05 Integro-ordinary differential equations

Keywords:
boundary value problems; integro-differential equation; Blasius problem; Padé approximants; Adomian decomposition method; numerical examples

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References:
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