Numerical Simulation of Singularly Perturbed Boundary Layer Problems

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Abstract

Multiple-scales method is presented for solving second and third order singularly perturbed problems with the boundary layer at one end either left or right. The original second and third order ordinary differential equations are transformed to partial differential equations. The solution of these problems shown exact nature by using Multiple-scales method and numerical simulations are performed on standard test examples to justify the robustness of the proposed method.