MASTER'S THESIS

Shooting method for singularly perturbed two-point boundary value problems

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Shooting Method for Singularly Perturbed Two-point Boundary Value Problems

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Abstract

An adaptive shooting method is considered for the numerical solution of singularly perturbed two-point boundary value problems. We consider the case of boundary layer as well as interior layer. A second-order modified Rosenbrock method is used as the initial-value problem solver of the shooting method. A comparison of numerical results of our method with other methods such as difference method, multiquadric method and Shishkin method have been made. It indicates that our adaptive scheme provides a more accurate and efficient solution.

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