

عنوان مقاله:

Detecting the location of the boundary layers in singular perturbation problems with general linear non-local boundary conditions

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خلاصه مقاله:

Singular perturbation problems have been studied by many mathematicians. Since the approximate solutions of these problems are as the sum of internal solution (boundary layer area) and external ones, the formation or non-formation of boundary layers should be specified. This paper, investigates this issue for a singular perturbation problem including a first order differential equation with general non-local boundary condition. It needs to say that it is simple for local boundary conditions and there is no difficulty. However, the formation of boundary layers for non-local case is not as stright forward as local case. To tackle this problem generalized solution of differential equation and some necessary conditions are used.

کلمات کلیدی:

Generalized solution, Necessary conditions, Non-local boundary conditions, Singular perturbation problems, Fundamental solution, Uniform limit

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