

ON THE ASYMPTOTICS OF A SOLUTION TO AN EQUATION
WITH A SMALL PARAMETER
IN A NEIGHBORHOOD OF A POINT OF INFLEXION

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We study the asymptotic behavior of the first boundary value problem for a second-order elliptic equation in the case where the small parameter is a factor at only one of the highest derivatives and the limit equation is an ordinary differential equation. Although the limit equation has the same order as the original equation, the problem under consideration is bisingular. We investigate the asymptotic behavior of this problem using the method of matched asymptotic expansions.

Keywords: singular problems, boundary value problems for partial differential equations, asymptotic expansions, matching method.

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