

# Iterative Method for Solving Boundary Value Problems for Biharmonic Type Equation

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**Abstract:** In this paper we consider the biharmonic type equation

$$\Delta^2 u - a\Delta u + bu = f \quad \text{in } \Omega,$$

where  $\Delta$  is the Laplace operator,  $\Omega$  is a bounded domain in  $R^n$  ( $n \geq 2$ ),  $\Gamma$  is the sufficiently smooth boundary of  $\Omega$ , and  $a, b$  are nonnegative constants. This equation arises, for example, in the theory of isotropic thin plates. For solving it with some types of boundary conditions we propose an iterative method of its reduction to boundary value problems for second order equations with the aim to use the achievements for the latter ones. The convergence of the method is studied and some numerical experiments are performed to demonstrate its efficiency.

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