

**SUPER CONVERGENCE OF CONFORMING FINITE ELEMENT APPROXIMATION  
FOR THE SECOND ORDER ELLIPTIC PROBLEM WITH ROBIN BOUNDARY  
CONDITION BY  $L^2$ - PROJECTION METHODS**

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**ABSTRACT**

A general superconvergence result of conforming finite element method for the elliptic problem is established by using  $L^2$ -projection method. Regularity assumption for the elliptic problem with regular partitions are required. Numerical experiment are given to verify the theoretical results.

**KEYWORDS:** Finite Element Methods, Superconvergence,  $L^2$ -Projection, Elliptic Problem with Robin Boundary Condition