THE EXTRAPOLATION FOR BOUNDARY FINITE ELEMENTS

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1. Introduction

It has been shown in [1]-[3] that the Richardson extrapolation can be applied to the elliptic Ritz projection with linear finite elements and increase the second-order accuracy of linear finite elements

\[ U_h(z) = u(z) + O(h^2|ln^1 h|) \]

in mesh point \( z \) at least to order three or four

\[ U_h(z) \equiv \frac{1}{3} (4 U_{h/2}(z) - U_h(z)) = u(x) + O(h^3 ln 1/h)(or O(h^4 ln 1/h)) \]

Where \( Th \) is uniform triangulation and \( T_{h/2} \) is generated from \( Th \) by dividing each triangle as usual into four congruent subtriangles.

In the present paper above basic results have been extended to boundary finite element and the coupling of finite elements and boundary finite elements.

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