

Fading regularization method and Discrete-Kirchhoff plate finite elements for the resolution of elliptic Cauchy problems

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Abstract

We propose in this work to combine the Discrete-Kirchhoff plate finite elements (DKT [1] for the triangular element and DKQ [2] for Discrete Kirchhoff Quadrilateral with the Fading Regularization Method [3, 4] in order to solve a Cauchy problem in thin plate theory. Then, we propose to adapt one of these elements to solve the Cauchy problem associated with the Laplace equation operator. We present some numerical examples that validate the efficiency of this strategy and its capability to recover the normal derivative on non-regular domains.

References

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