

THE WEIGHTED RIESZ-GALERKIN METHOD  
FOR ELLIPTIC BOUNDARY VALUE PROBLEMS  
ON UNBOUNDED DOMAINS

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**Abstract**

Recently Babuška-Oh introduced the Method of Auxiliary Mapping (MAM) which efficiently handles elliptic boundary value problems containing singularities. In this paper, the Weighted Riesz-Galerkin Method (WRGM) is investigated by introducing special weight functions. Together with this method, MAM is modified to yield highly accurate finite element solutions to general elliptic boundary value problems on the exterior of bounded domains at low cost.

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