

SOLUTION OF SINGULAR ELLIPTIC PDES ON A UNION OF RECTANGLES USING SINC METHODS*

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Abstract. The numerical solution of problems with singularities presents special difficulties for most methods. Adjustments to standard methods are typically made for only a special type of singularity, usually known a priori. The family of sinc numerical methods is naturally suited for general singular problems. Here, the methods are extended and applied to two-dimensional, elliptic first-order systems of mixed boundary value problems with singularities of the form x^α .

Key words. elliptic, PDE, sinc methods, singular problems, BVP

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