EXPONENT OF SINGULARITY OF A FOURTH ORDER ELLIPTIC BOUNDARY VALUE PROBLEM

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Elliptic boundary value problems in polygonal domains have non regular solutions near some angular corners.These singularities have the form $r^\alpha \phi(\theta)$ where (r, θ) are the polar coordinates and α is the exponent of singularity which is, in general, a solution of some explicit transcendental equations.

In this paper we are concerned with computing the exponent of singularity for a fourth order elliptic boundary value problem issued from plane anisotropic linear elasticity. Classical methods do not work because our problem is not invariant by rotation.

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