

The Dirichlet problem for certain fourth-order elliptic equations with rough coefficients

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Abstract

In 1986, Dahlberg, Kenig and Verchota proved that unique solutions to the Dirichlet problem for the bilaplacian Δ^2 , with L^2 boundary data, exist in Lipschitz domains. After applying a change of variables, the bilaplacian Δ^2 becomes a fourth-order operator of the form $L^*(aL)$, where L is a second-order divergence-form elliptic operator and a is a scalar-valued function. We prove existence and uniqueness of solutions to the Dirichlet problem for some other operators of the form $M^*(aL)$.