Laplace type operators: Dirichlet problem

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Abstract. We investigate Laplace type operators in the Euclidean space. We give a purely algebraic proof of the theorem on existence and uniqueness (in the space of polynomial forms) of the Dirichlet boundary problem for a Laplace type operator and give a method of determining the exact solution to that problem. Moreover, we give a decomposition of the kernel of a Laplace type operator into $SO(n)$-irreducible subspaces.