

abstract-kunstmann.txt

We study boundary value problems that are elliptic with a parameter in an  $L^q(\Omega)$ -setting and are particularly interested in the case where the coefficients of principal part of the operator on the domain are only bounded and measurable.

Assuming that the natural norm bound on the full inhomogeneous resolvent problem holds in  $L^q(\Omega)$  for some  $q$ , we use a modification of Davies' method to obtain exponential off-diagonal estimates for the solution operators. These off-diagonal estimates can be used to extend the scale of  $L^q$ -spaces in which solution operators act. They also imply vector valued estimates which in turn can be used to establish optimal  $L^p$ - $L^q$ -estimates for the corresponding parabolic problem, including inhomogeneous boundary data.

For a variety of operators this gives a new approach to known optimal regularity results, but it also yields new results for operators with VMO-coefficients.