On optimal L^p-L^q-estimates for parabolic boundary value problems

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We study boundary value problems that are elliptic with a parameter in an $L^q(\Omega)$-setting. We present a modification of Davies' method for these problems and show that the natural bound on the full inhomogeneous resolvent problem self-improves to exponential off-diagonal estimates for the solution operators where the coefficients of the domain operator are only bounded and measurable. These off-diagonal estimates are used to enlarge the L^q-scale and to establish optimal L^p-L^q-estimates for the corresponding parabolic problem, including inhomogeneous boundary data. As an application we derive new results for operators with VMO-coefficients.