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On extrapolation of maximal regularity for non-autonomous parabolic operators

From the PDE point-of-view, this result is about linear inhomogeneous non-autonomous parabolic equations or systems, with discontinuous dependence of time. We show that the property of maximal L^p -regularity, adapted to these problems, can be extrapolated from one exponent p to an open interval of exponents. In particular, we take a closer look at the cases of operators given by sesquilinear forms and at simultaneous extrapolation of spatial regularity. The linear theory can be applied to quasilinear problems to provide "additional" compactness.

This is joint work with Tom ter Elst (University of Auckland) and Joachim Rehberg (WIAS Berlin).