

Abstract

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Perturbation of linear non-autonomous parabolic problems in scales of Banach spaces.

Abstract: We present an abstract theory for perturbations of evolution operators of linear non-autonomous parabolic problems on scales of Banach spaces, developing techniques to determine in which spaces of the scale the problem has a solution and where it regularizes. This theory can be applied to specific cases in scales of Bessel potential spaces and (uniform) Lebesgue spaces, addressing perturbations defined by interior potentials, boundary potentials, or transport terms, where the spaces in which there is existence of solution and regularization can be explicitly determined.

This is a joint work with Aníbal Rodríguez-Bernal (UCM).