Maximal regularity for the Cauchy problem of the heat equation in the class of bounded mean oscillation.

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Abstract

It is well understood that the Cauchy problem of the heat and the Stokes equation satisfy maximal regularity in the UMD Banach space. Since the UMD Banach space is necessarily reflexive, it is required another treatment for maximal regularity in non-reflexive Banach spaces. We consider maximal regularity for the Cauchy problem for heat and the Stokes system in bounded mean oscillation (BMO). The proof relies on the symmetric form of the semi-norm of BMO and inhomogeneous extension of Stein's characterization of BMO.