A FRAMEWORK FOR NON-HOMOGENEOUS ANALYSIS ON METRIC SPACES, AND THE RBMO SPACE OF TOLSA

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Abstract

A new class of metric measure spaces is introduced and studied. This class generalises the well-established doubling metric measure spaces as well as the spaces $(\mathbb{R}^n, \mu)$ with $\mu(B(x, r)) \leq Cr^d$, in which non-doubling harmonic analysis has recently been developed. It seems to be a promising framework for an abstract extension of this theory. Tolsa’s space of regularised BMO functions is defined in this new setting, and the John-Nirenberg inequality is proven.

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