

**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, μ) 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.

2000 *Mathematics Subject Classification.* 30L99, 42B35.

Key words. Non-doubling measure, doubling balls, John-Nirenberg inequality.