

Title: Random Cubes in a Metric Space with Application to Singular Integrals with Non-doubling Measures

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Abstract: Important developments in non-homogeneous harmonic analysis over the last decade depended on the use of random systems of dyadic cubes, rather than one fixed system only. In this way, certain irregular situations are effectively avoided by arguing that their occurrence only has a small probability. In this talk, I discuss the extension of this theory to metric measure spaces, where the randomization of the dyadic structure, originally produced with the help of the translation group on the Euclidean space, needs to be replaced by new geometric arguments.