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Atomic Decomposition of Non-Homogeneous Hardy Spaces

Real Hardy spaces emerge in analysis as suitable substitutes of L^p spaces when p is less than 1. Functions in these spaces can be nicely decomposed into a sum of basic building blocks. This work generalizes these so called *atomic decompositions* to *non-homogeneous* Hardy spaces defined on certain metric measure spaces. We will start by defining the function spaces in play, noting the differences with the global Euclidean case; then we will present the modified atomic decomposition and some geometric lemmas used to prove the result. This project was supervised by Denis Vinokurov (Université de Montréal) and Galia Dafni (Concordia University).