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Atomic and Molecular Characterizations of Hardy Spaces in Ahlfors-David Regular Quasi-Metric Spaces. Preliminary report.

In this talk we will survey some recently obtained results pertaining to the theory of Hardy spaces (H^p spaces) in the setting of d -dimensional Ahlfors-David regular quasi-metric spaces. More specifically, we will introduce Hardy spaces defined via a grand maximal function and prove that this notion of H^p has atomic and molecular characterizations in the above context. We will also discuss the dual of H^p as well as present some criterion for the boundedness of linear operators on H^p , including the class of singular integral operators of Calderón-Zygmund type. (Received August 12, 2013)