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"Lipschitz Functions on Quasiconformal Trees"

A *quasiconformal arc* (also known as a quasi-arc) is a compact arc that is *bounded turning* and *doubling*. We first demonstrate that, given any quasiconformal arc γ, the space $\mathrm{Lip}_0(\gamma)$ is isomorphic to L^∞. We then proceed to consider *quasiconformal trees*. These are precisely the metric trees which are doubling and bounded turning. Given a quasiconformal tree T, we prove that $\mathrm{Lip}_0(T)$ is also isomorphic to L^∞. This is accomplished via a certain decomposition of T into constituent quasiconformal subarcs. Finally, we show that, given any finite union $X = T_1 \cup \cdots \cup T_n$ of quasiconformal trees, the space $\mathrm{Lip}_0(X)$ is isomorphic to L^∞. For the sake of brevity, we will not attempt to provide a detailed account of how to prove these results. Instead, we will attempt to communicate the overarching geometric ideas behind the proofs. Time permitting, we will also mention how some of the methods behind these results can be used to study the concept of Lipschitz dimension.