

Ultrametrizations of locally compact 0-dimensional spaces

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Abstract: It is well known that every metrizable, separable, locally compact, 0-dimensional space X can be metrized with a proper ultrametric d . It turns out that if X is non-compact, then every unbounded, countable set of non-negative reals containing 0 such that 0 is an accumulation point if X is non-discrete, is the set of values of an equivalent proper ultrametric d' . Under certain natural additional conditions on X , the families of d -balls and d' -balls coincide.

This fact yields an interesting analytic corollary concerning the spectrum of an operator (the hierarchical Laplacian) on X studied in mathematical physics.

This is a joint work with A. Bendikov [1].

[1] A. Bendikov and P. Krupski, *On the Spectrum of Hierarchical Laplacian*, Potential Analysis 41 (2014), 1247–1266.