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Hung Lu* (luhungtim@yahoo.com), Department of Mathematics, 1164 Bishop Street, MP 260, Honolulu, HI 96813, and **Michel L. Lapidus**, CA. *Nonarchimedean Cantor Set and String*.

We construct a nonarchimedean (or *p-adic*) analogue of the classical ternary Cantor set \mathcal{C} . In particular, we show that this nonarchimedean Cantor set \mathcal{C}_3 is self-similar. Furthermore, we characterize \mathcal{C}_3 as the subset of 3-adic integers whose elements contain only 0's and 2's in their 3-adic expansions and prove that \mathcal{C}_3 is naturally homeomorphic to \mathcal{C} . Finally, from the point of view of the theory of fractal strings and their complex fractal dimensions [7, 8], the corresponding nonarchimedean Cantor string resembles the standard real (or *archimedean*) Cantor string perfectly. (Received July 10, 2007)