Scale function and topological entropy in locally compact totally disconnected groups

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Let G be a locally compact totally disconnected group. Until the definition of scale function in such groups given by George Willis, almost the only structure known was a theorem of van Dantzig, namely that a locally compact totally disconnected group G has a local base at e_G given by compact, open subgroups.

In this talk I will explain the relationship between the scale function $s(\phi)$ of a topological automorphism of G and the topological entropy $h_{top}(\phi)$ of the same automorphism. It will be presented a necessary and sufficient condition for the equality $h_{top}(\phi) = \log s(\phi)$, and some other properties will be pointed out. Joint work with A. Giordano Bruno and D. Dikranjan.