Multiplicity of topological systems

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We define the topological multiplicity of an invertible topological system (X, T) as the minimal number k of real continuous functions $f_1, \dots, f_k$ such that the functions $f_i \circ T^n$, $n \in \mathbb{Z}$, $1 \leq i \leq k$, span a dense linear vector space in the space of real continuous functions on X endowed with the supremum norm. We study some properties of topological systems with finite multiplicity. After giving some examples, we investigate the multiplicity of subshifts with linear growth complexity.