
Weakly and Strongly Aperiodic SFTs on Baumslag-Solitar Groups

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Résumé

This talk presents various Subshifts of Finite Type (SFTs) on the Baumslag-Solitar groups of parameters m and n , the simplest two-generator one-relator groups. SFTs are sets of colorings of Cayley graphs of a group given a finite number of colors and local constraints. We introduce two notions of aperiodicity on SFTs: weak and strong aperiodicity, the first being when any coloring of the SFT has an infinite number of distinct translated copies, the second when any coloring of the SFT has no period whatsoever. We prove that Baumslag-Solitar groups of parameters $(1,n)$ and (n,n) both have strongly and weakly-but-not-strongly aperiodic SFTs, using various methods: by studying carefully a construction by Aubrun and Kari, by applying substitutions on biinfinite words, and with tools from group theory and a theorem developed by Jeandel. It is interesting to note that this behavior in (a)periodicity is distinct from \mathbb{Z} and \mathbb{Z}^2 , but similar to \mathbb{Z}^d , $d \geq 3$.

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