

Aperiodic Subshifts of Finite Type on Baumslag-Solitar Groups

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The Cayley graph of a group is a way to visualize its structure as a graph. A Subshift of Finite Type (SFT) on a group is the set of all the colorings of the Cayley graph that use a given finite number of colors and respect a given finite number of adjacency rules between colored vertices. Initially studied on \mathbb{Z} as tilings of the biinfinite line with dominoes, the notion was extended to \mathbb{Z}^2 using square tiles with colored edges called Wang tiles, then to any \mathbb{Z}^d , $d > 2$; and more recently to any group of finite type.

On \mathbb{Z} , any SFT must contain a periodic coloring – but this becomes false with \mathbb{Z}^2 , on which there are some SFTs with only non-periodic colorings. On \mathbb{Z}^d , $d > 2$, two distinct and finer notions of aperiodicity arise. This talk will detail these results, then proceed to prove, using notably substitutions on biinfinite words, that these finer notions of aperiodicity are also present for SFTs on some Baumslag-Solitar groups, that are two-generator one-relator groups that resemble \mathbb{Z}^2 .

This is a joint work with E. Moutot.

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Classification de Session: Présentations Doctorants