

ALGEBRA SEMINAR

Finite-state regular wreath products

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Date: February 11, 2022

Time: 14:30 pm

Acesso à sala virtual:

<https://us02web.zoom.us/j/88339053665?pwd=S2xCeFR3VUdCdGZHUnpCZHZRbjZQdz09>

ID da reunião: 883 3905 3665 Senha de acesso: 975213

Abstract. The automorphism group \mathcal{A}_m of the regular one-rooted m -tree \mathcal{T}_m is identified with the wreath product $\mathcal{A}_m \wr_Y S_m$, where $Y = \{1, \dots, m\}$. A subgroup G of \mathcal{A}_m is said to be finite-state if given $\alpha = (\alpha_0, \dots, \alpha_{m-1})\sigma \in G$, $Q(\alpha)$ is finite, where $Q(\alpha) = \{\alpha\} \cup Q(\alpha_0) \cup \dots \cup Q(\alpha_{m-1})$ is the set of states of α . And G is said to be self-similar if given $\alpha \in G$, then $Q(\alpha) \subset G$. In this talk, we study some regular wreath products $A \wr H$ that are finite-state, where A is a finite abelian group and H is a finite-state self-similar group. In particular, we prove that $C_2 \wr (C_2 \wr \mathbb{Z})$ is a finite-state subgroup of \mathcal{A}_9 . This is a joint work with Alex Carrazedo Dantas (UnB) and Tulio Marcio Gentil dos Santos (IF Goiano).