The width of terms of the derived series in a finitary automorphisms group of a spherically homogeneous rooted tree.

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Our definitions agree with the ones given in [1]. Let $\overline{k} = k_1, k_2, k_3, \ldots$ be a sequence of integers with $k_i \geq 2$, $i \in \mathbb{N}$ and let $\overline{X} = X_1, X_2, X_3, \ldots$ be a sequence of alphabets $|X_i| = k_i$. We denote by $\mathcal{T}^{(\overline{X})}$ *the spherically homogenous rooted tree of the branching indices* $\overline{k}$. An automorphism of $\mathcal{T}^{(\overline{X})}$ which operates on first m-levels of the tree $\mathcal{T}^{(\overline{X})}$ is called *a finitary automorphism*. The group of all finitary automorphisms of $\mathcal{T}^{(\overline{X})}$ is denoted by $\mathsf{Aut}_f(\mathcal{T}^{(\overline{X})})$.

We give the full characterization of the derived series of $\mathsf{Aut}_f(\mathcal{T}^{(\overline{X})})$ for a spherically homogenous rooted tree. Moreover we describe the width of all commutator subgroup of the derived series.

References

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