Seminário de Álgebra

On genus of a finitely generated free group.

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19/03/2021
14:30 Horas
Zoom

Abstract.

Let $\mathcal{F}$, $\mathcal{S}$ and $\mathcal{N}$ be the formations of finite, finite soluble and finite nilpotent groups, respectively and denote by $\mathcal{C}$ one of these formations. Let Γ be a finitely generated residually-$\mathcal{C}$ group. The **$\mathcal{C}$-genus** of Γ, denoted by $\mathcal{G}_{\mathcal{C}}(\Gamma)$, consists of isomorphism classes of finitely generated residually-$\mathcal{C}$ groups G having the same quotients in $\mathcal{C}$ as Γ.

Let F be a finitely generated free group. The groups in $\mathcal{G}_{\mathcal{N}}(F)$ were introduced by Baumslag with the name of **parafree** groups. If F is not abelian, then $\mathcal{G}_{\mathcal{N}}(F)$ is infinite. However, it is still open whether $\mathcal{G}_{\mathcal{F}}(F)$ and $\mathcal{G}_{\mathcal{S}}(F)$ consist of a single element. The case of $\mathcal{G}_{\mathcal{F}}(F)$ is a well-known problem attributed to Remeslennikov. In my talk I will show that the groups in $\mathcal{G}_{\mathcal{F}}(F)$ and $\mathcal{G}_{\mathcal{S}}(F)$ are residually nilpotent. This result answers a question of Baumslag.