Infinite graphs of groups

Mattheus P. S. Aguiar*

Department of Mathematics

University of Brasília

Brasília, Brazil

Abstract

Given an infinite graph of groups $(\mathcal{G}, \Gamma)$ we construct a profinite graph of groups $(\overline{\mathcal{G}}, \overline{\Gamma})$ such that Γ is densely embedded in $\overline{\Gamma}$, the fundamental profinite group $\Pi_1(\overline{\mathcal{G}}, \overline{\Gamma})$ is the profinite completion of $\pi_1(\mathcal{G}, \Gamma)$ and the standard tree $S(\mathcal{G}, \Gamma)$ embeds densely in the standard profinite tree $S(\overline{\mathcal{G}}, \overline{\Gamma})$. This answers a Ribes' question [4, Question 6.7.1]. Generalising the main results of [3] and [2] we answer two other questions of Ribes [4, Questions 15.11.10 and 15.11.11] proving that a virtually free group G is subgroup conjugacy separable and the normalizer $N_G(H)$ of a finitely generated subgroup H of G is dense in $N_{\hat{G}}(\overline{H})$. We also give an entirely new description of the fundamental group of a profinite graph of groups using the language of paths, more closely related to the abstract case introduced in [5].

This is a joint work with Pavel Zalesski.

References

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