

ALGEBRA SEMINAR

INTERSECTION OF SUBGROUPS IN A SURFACE GROUP.

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Zoom

Abstract

Let G be a surface group, i.e the fundamental group of a compact surface. Denote by $d(G)$ the number of generators of G and by $\chi(G)$ the Euler characteristic of G . We put $\bar{\chi}(G) = \max\{0, -\chi(G)\}$.

In this talk I will explain the following two results. In the first result we prove that for any two finitely generated subgroups U and W of G ,

$$\sum_{x \in U \backslash G/W} \bar{\chi}(U \cap xWx^{-1}) \leq \bar{\chi}(U) \cdot \bar{\chi}(W).$$

From this we obtain the Strengthened Hanna Neumann conjecture for non-solvable surface groups. In the second result we show that if R is a retract of G , then for any finitely generated subgroup H of G ,

$$d(R \cap H) \leq d(H).$$

This implies the Dicks-Ventura inertia conjecture for free groups.

The talk is based on a joint work with Yago Antolín