

DEHN FUNCTIONS OF CENTRAL PRODUCTS OF NILPOTENT GROUPS

Fudan Topology Seminar

Speaker: Claudio Llosa Isenrich

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Time: Fri, Mar. 8th, 16:00 - 17:00

Venue: Room 102, SCMS

Abstract: The Dehn function of a finitely presented group provides a quantitative measure for the difficulty of detecting if a word in its generators represents the trivial element of the group. By work of Gersten, Holt and Riley the Dehn function of a nilpotent group of class c is bounded above by $n^{\{c+1\}}$. However, we are still far from determining the precise Dehn functions of all nilpotent groups. In this talk, I will explain recent results that allow us to determine the Dehn functions of large classes of nilpotent groups arising as central products. As a consequence, for every $k > 2$, we obtain many pairs of finitely presented k -nilpotent groups with bilipschitz asymptotic cones, but with different Dehn functions. This shows that Dehn functions can distinguish between nilpotent groups with the same asymptotic cone, making them interesting in the context of the conjectural quasi-isometry classification of nilpotent groups. This talk is based on joint works with García-Mejía, Pallier and Tessera.