Du
09
DÉC.
2022

14h30
-
16h30

GROUPE DE TRAVAIL "TRANSCENDANCE ET COMBINATOIRE"

What do we know about the cogrowth sequence?

Institut Henri Poincaré
amphithéâtre Darboux
11 Rue Pierre et Marie Curie, 75005 Paris

INSCRIPTION

Take a group and a set of generators. Denote by a(n) the number of words in the generators with product 1 of length n (these are loops in the corresponding Cayley graph). The cogrowth sequence {a(n)} is the main object of our study. Turns out, it carries remarkably rich information about the group, as one considers arithmetic and asymptotic properties of a(n), as well as algebraic properties of the generating function for {a(n)}. In the first half of the talk I will review what is known about the problem from different points of view: combinatorics, group theory and computational complexity. In the second half, I will present our recent work on the subject (joint with David Soukup), where we obtain the first negative result for the cogrowth sequence of nilpotent groups in the most unexpected way. This talk is aimed at the general audience and no background will be assumed.

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HORAIRES

L'institut :
• lundi au vendredi de 8h30 à 18h,
• fermé les jours fériés.

Le musée - Maison Poincaré :
• lundi, mardi, jeudi et vendredi
de 9h30 à 17h30,
• samedi de 10h à 18h,
• fermé le mercredi et le dimanche.