COLOQUIO JUNIOR

Jueves 29 de octubre, 18:00 (café a las 19:00)

Aula 520, Módulo 17, Facultad de Ciencias, UAM

Paloma López Larios

ICMAT-UCM

Trickle trick: just squash that spider!

Trickle groups are a family of groups that contains several important examples of groups, such as right-angled Artin and Coxeter groups and cactus groups. All of these groups have very similar solutions to the word problem, that is, the problem of finding an algorithm (if it exists) that determines if a word over the generators of a group represents the trivial element or not. The definition of trickle groups provides a common framework to study groups that admit this shared solution to the word problem.

In its original form, the definition of trickle groups can be somewhat technical and difficult to work with. In this talk, we will see that a more geometric approach to trickle groups is possible. Using Van Kampen diagrams, we will be able to characterise geodesics in the Cayley graph of these groups in terms of the presence of certain spiders in the diagrams. Once we have this, we will just need to appropriately squash these spiders in order to obtain some interesting results about trickle groups. In particular, we will see that trickle groups satisfy the falsification by fellow traveller property and that their solution to the word problem can be geometrically recovered.

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