

# Seminarium geometrów

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## **The conjugacy problem for $\text{Out}(F_3)$**

(Joint work with: F Dahmani, S. Francaviglia and N. Touikan.)

Abstract: Dehn's problems have been central to the birth and direction of geometric group theory, and this talk will be mainly concerned with the second of these, the conjugacy problem. This problem asks, for a given group, if there is an algorithm which can determine whether or not two elements of the group are conjugate. I would like to announce a positive solution for a very particular group,  $\text{Out}(F_3)$ , which is the group of outer automorphisms of the free group of rank 3. The problem for general  $n$  - that is, for  $\text{Out}(F_n)$  - remains stubbornly open even though these groups have been the subject of an intense amount of study. I will gently sketch the proof strategy, talk about analogues with the mapping class group of a hyperbolic surface as well  $\text{GL}_n(\mathbb{Z})$ , the group of invertible matrices over the integers, and give an idea of the techniques that we used to solve the problem.

*streaming via ZOOM:*

Meeting ID: 967 6507 7409

Meeting password: "GS" (two letters) followed by the Euler characteristic of the closed orientable surface of genus 89.