CENTRO DE MATEMÁTICA UNIVERSIDADE DO PORTO

GEOMETRY AND TOPOLOGY SEMINAR

The pro-V topology on a free group: deciding denseness and closedness.

Claude Marion

Centro de Matemática da Universidade do Porto

Abstract. Given a free group F and a pseudovariety $\mathbf{V}$ of finite groups, i.e. a class of finite groups closed under taking subgroups, quotients and finitary direct products, we endow F with its pro-$\mathbf{V}$ topology. Given an arbitrary finitely generated subgroup H of F, some classical topological decidability problems are:

(i) Is it decidable whether H is dense?

(ii) Is it decidable whether H is closed?

Following work of Hall, Ribes and Zalesski, and Margolis, Sapir and Weil, these problems have positive answers when $\mathbf{V}$ is the pseudovariety of all finite groups, all finite p-groups and all finite nilpotent groups, respectively. They are equivalent but open when $\mathbf{V}$ is the pseudovariety of all finite solvable groups.
In this talk, we investigate these problems for several pseudovarieties, including equational pseudovarieties and the pseudovariety of all finite supersolvable groups. (Joint work with Pedro Silva and Gareth Tracey.)

FRIDAY, APRIL 19TH **15H30** **ROOM: FC1 029**

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