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*Combination of groups that contain a hyperbolically embedded collection of subgroups*

Hyperbolically embedded subgroups were introduced in a paper by Dahmani, Guirardel and Osin as a generalization of relatively hyperbolic groups and were used to solve a number of open problems about the mapping class groups of closed surfaces and the outer automorphism groups of free groups.

In the first part of the talk we will introduce two equivalent definitions of groups with a hyperbolically embedded subgroup including a "Bowditch" approach introduced by E. Martinez Pedroza and F. Rashid. Then we will discuss some combination theorems of these groups which generalizes a result of Dahmani, Guirardel and Osin.

This is a joint work in progress with E. Martinez Pedroza.