

# Hyperbolically embedded subgroups in groups acting on trees and in graph products

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Abstract: The concept of a hyperbolically embedded subgroup was introduced in a recent paper of Dahmani, Guirardel and Osin, where it was 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 I will recall the definitions and properties of hyperbolic and relatively hyperbolic groups. Next I will define groups with hyperbolically embedded subgroups, discussing their similarities with relatively hyperbolic groups. In the second part I will give a criterion for the existence of hyperbolically embedded subgroups in groups that act on simplicial trees. Finally, I will discuss a similar criterion for graph products of groups together with some applications. The talk will be based on joint work with Denis Osin.