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Surface Subgroups of Graph Products of Groups.

For a given group, finding a surface subgroup (namely, a subgroup isomorphic to the fundamental group of a closed hyperbolic surface) is an important question motivated by 3-manifold theory. In particular, a conjecture raised by Gromov asserts that every 1-ended word-hyperbolic group contains a surface subgroup. In this talk, I will present results concerning surface subgroups of groups defined by graphs: right-angled Artin and Coxeter groups, and graph products of finite groups. More precisely, I will describe lower and upper bounds for the classes of graphs on which these groups contain surface subgroups. As a corollary, the class of all the finitely generated groups satisfying the Gromov conjecture (i.e. groups which are either not 1-ended, not word-hyperbolic or having surface subgroups) is closed under taking graph products. (Received February 26, 2009)