

1116-20-629

David M. Carroll* (carroll@math.tamu.edu), Department of Mathematics, Mailstop 3368, Texas A&M University, TX 77843-3368, and **Benjamin Francisco** and **Zoran Sunic**. *Some computational complexity results for right-angled Artin groups.*

Right-angled Artin groups, also known as graph groups, are groups which can be presented in a simple way using a graph: each vertex is a generator, and two generators commute if and only if they are adjacent in the graph. Despite their apparent simplicity, in the last few decades right-angled Artin groups and their subgroups have been shown to exhibit surprisingly deep algebraic and geometric properties.

In this talk, we examine right-angled Artin groups from a computational complexity point of view. In particular, we discuss the problem of deciding if a right-angled Artin group, given by its defining graph, is free-by-cyclic or free-by-free; we show the former can be done in polynomial time but the latter is NP-complete. This is a joint work with Zoran Šunić and Benjamin Francisco. (Received September 09, 2015)