

## Combination theorems for cubulated groups

Tim Hsu

`hsu@math.sjsu.edu`

*Department of Mathematics*

*San José State University*

*San José, CA 95192-0103*

*USA*

### **Abstract**

We say that a group  $G$  is *cubulated* if there exists a CAT(0) cube complex on which  $G$  acts properly and cocompactly. In this talk, we will discuss recent work by the speaker and D. Wise on proving combination theorems for cubulated groups. In particular, we will show that a graph of free groups with cyclic edge groups that contains no non-Euclidean Baumslag-Solitar subgroups is cubulated, with the following notable consequence:

**Corollary.** *If  $G$  is a word-hyperbolic group that splits as a graph of free groups with cyclic edge groups, then  $G$  is virtually a subgroup of a right-angled Artin group. In particular,  $G$  is linear.*

If time permits, we will also discuss recent progress in, and future directions for, this project.

*This is joint work with Daniel Wise, McGill University.*