

1061-05-128

Federico Ardila* (federico@math.sfsu.edu), Department of Mathematics, San Francisco State University, 1600 Holloway Ave., San Francisco, CA 94132. *The combinatorics of CAT(0) cubical complexes*. Preliminary report.

A CAT(0) cube complex is a connected, non-positively curved space which is built by gluing cubes along their faces. These complexes play an important role in geometric group theory and in numerous applications in biology and robotics, among others. Gromov showed the remarkable fact that CAT(0) cube complexes can be characterized by their local combinatorial structure at each vertex. Sageev later gave a global version of this result, and we propose another one: a correspondence between CAT(0) cube complexes and certain combinatorial objects which we call “posets with incompatible pairs”. The talk will explain this correspondence and discuss some applications. (Received April 12, 2010)