

1087-18-62

Kenneth S. Brown* (kbrown@cornell.edu). *Rewriting systems and discrete Morse theory.*

In the 1980s Ross Geoghegan and I introduced a method for "collapsing" a CW complex to a quotient complex with fewer cells. We did this in connection with our study of the homological properties of Richard Thompson's group F . I later showed that there was a similar "collapsing scheme" that could be applied to any group presented by a complete rewriting system.

Discrete Morse theory, which was developed in the 1990s and is well known to algebraic combinatorialists, is equivalent to the theory of collapsing schemes. But the connection with rewriting systems does not seem to be as well known. In this talk I will describe collapsing schemes in their original form and survey the applications to homological group theory, with emphasis on rewriting systems. (Received November 26, 2012)