

1007-20-157      **Lucas Sabalka\*** ([sabalka@math.uiuc.edu](mailto:sabalka@math.uiuc.edu)). *Discrete Morse theory and graph braid groups.*

If  $\Gamma$  is any finite graph, then the *unlabelled configuration space of  $n$  points on  $\Gamma$* , denoted  $UC^n\Gamma$ , is the space of  $n$ -element subsets of  $\Gamma$ . The *braid group of  $\Gamma$  on  $n$  strands* is the fundamental group of  $UC^n\Gamma$ . We apply a discrete version of Morse theory to these spaces, for any  $n$  and any  $\Gamma$ , to obtain presentations for the corresponding braid groups. (Received February 18, 2005)