Morse representations for a class of discrete braids

Rob Vandervorst

(VU Amsterdam)

We discuss a special class of piecewise linear braids and their natural connection to parabolic dynamics, in particular twist maps. The interaction between the topology of the discrete braid classes and the dynamics of (discrete) parabolic equations gives rise to algebraic invariants for braids. We explain how the discrete braid classes lead to Morse representations and Morse decompositions and how such representations behave with respect to `refinement'. The latter plays a role in relating the invariants to Floer homology for more general classes of braids.