

Meeting: 999, Nashville, Tennessee, SS 5A, Special Session on Topological Aspects of Group Theory

999-20-177 **Kai-Uwe Bux***, P. O. Box 400137, Kerchof Hall, University of Virginia, Charlottesville, VA
22904-4137. *Braiding Matching Complexes and Houghton Groups.*

The m by n chessboard complex is the simplicial complex of non-threatening configurations of rooks on an m by n chessboard. Homotopy properties of this complex have been studied in topological combinatorics. In particular, it is known that these complexes are spherical provided the chessboard is far enough from a square shape. The symmetric groups on m and n letters both act on this complex by permuting rows and columns of the chessboard. I will describe a series of complexes that relate to the chessboard complexes as the braid groups relate to the symmetric groups. These complexes are huge: every non-maximal simplex has an infinite link. I shall discuss connectivity and the property for the new family of complexes.

The interest for these complexes stems from a conjecture concerning the finiteness properties of certain groups related to Houghton groups introduced by Franz Degenhardt.

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