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**John Shareshian** and **Russ Woodroffe\*** ([rwoodroffe@math.msstate.edu](mailto:rwoodroffe@math.msstate.edu)), Department of Mathematics & Statistics, PO Box MA, Mississippi State, MS 39762. *Homology cycles in the coset posets of certain finite groups.*

For  $G$  a finite group, the coset lattice  $\mathfrak{C}(G)$  consists of (the empty set together with) all cosets of all subgroups of  $G$ , ordered by inclusion. Brown has asked whether there is any group such that the order complex of the coset lattice is contractible. I'll show how to exhibit explicit homology cycles for the coset poset of certain finite groups: solvable, alternating, and symmetric groups. The symmetric group case naturally gives rise to an intriguing subposet.

I'll also briefly discuss how this fits in to our recent broader progress on Brown's Conjecture. (Received December 04, 2012)