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John Shareshian* (shareshi@math.wustl.edu) and **Russ Woodroffe**
(rwoodroffe@math.msstate.edu). *Noncontractibility of order complexes of coset posets.*

Let G be a finite group. The coset poset $C(G)$ is the set of all cosets of all proper subgroups of G , partially ordered by inclusion. The order complex $\Delta C(G)$ is the simplicial complex whose k -dimensional faces are the chains of length k in $C(G)$. K. S. Brown asked whether $\Delta C(G)$ can be contractible. Using P. A. Smith theory, we show that if no composition factor of G is an alternating group, then $\Delta C(G)$ has nontrivial reduced homology and is therefore not contractible. (Received August 28, 2012)