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**Egon Schulte\*** ([schulte@neu.edu](mailto:schulte@neu.edu)), Northeastern University, Department of Mathematics,  
Boston, MA 02115. *Semiregular Polytopes and Amalgamated C-Groups*. Preliminary report.

In the classical setting, a convex polytope is semiregular if its facets are regular and its symmetry group is transitive on vertices. The talk is about semiregular abstract polytopes, which have abstract regular facets, still with combinatorial automorphism group transitive on vertices. We analyze the structure of the automorphism group, focusing in particular on polytopes with two kinds of regular facets occurring in an “alternating” fashion. In particular we use group amalgamations to prove that given two compatible  $n$ -polytopes  $P$  and  $Q$ , there exists a universal abstract semiregular  $(n+1)$ -polytope which is obtained by “freely” assembling alternate copies of  $P$  and  $Q$ . We also employ modular reduction techniques to construct finite semiregular polytopes from reflection groups over finite fields. (Received September 12, 2011)