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1003-06-478 **Matthew E. Horak*** (matthew.horak@trincoll.edu), Department of Mathematics, Trinity College, 300 Summit Street, Hartford, CT 06106-3100, and **Melanie Stein**, Department of Mathematics, Trinity College, 300 Summit Street, Hartford, CT 06106-3100. *Partially ordered groups acting on oriented order trees.*

Many interesting groups in topology admit left-invariant total orders. Examples include mapping class groups of orientable surfaces with boundary, and also the fundamental groups of many 3-manifolds. On the other hand, many 3-manifold groups are known not to be orderable because they cannot act nontrivially on oriented order trees. Manifolds with such fundamental groups provided the first examples of hyperbolic 3-manifolds without Reebless foliations. In general, an action of a countable group on an oriented order tree endows the group with an invariant partial order with the property that we call *simply connected with finite switches*, provided that the tree has a point with totally ordered stabilizer. Conversely, a countable group with such a partial order acts on an oriented order tree such that there is a point with trivial stabilizer. We extend these results by showing that actions with nonorderable stabilizers correspond to partial orders in which the set of elements that are noncomparable to the identity but that share both upper and lower bounds with the identity forms a subgroup such that the set of cosets by this subgroup inherits an invariant simply connected partial order with finite switches. (Received September 15, 2004)