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The number of circular orderings of a group

A group is left-orderable if it admits a strict total ordering that is invariant under multiplication from the left. For countable groups, this is equivalent to acting on the real line by order-preserving homeomorphisms. A group is circularly orderable if it admits a "cyclic orientation cocycle" satisfying a certain non-degeneracy condition, but in the countable case this boils down, as expected, to the existence of a orientation-preserving action by homeomorphisms on the circle.

The set of all left-orderings of a group forms a topological space, and similarly, so does the set of all circular orderings. I will provide an introduction to these spaces and describe the structure of groups whose spaces of left and circular orderings are degenerate, in that the consist simply of a finite set of points with the discrete topology. This is joint work with Cristobal Rivas and Kathryn Mann.