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Rylee Alanza Lyman* (rylee.lyman@tufts.edu). *Outer automorphisms of free products of finite groups at infinity*. Preliminary report.

In 1995, Vogtmann showed that $\text{Out}(F_n)$, the group of outer automorphisms of a free group of rank n , is *simply-connected at infinity* when $n \geq 5$. That is, if $\text{Out}(F_n)$ acts on a complex X properly and cocompactly, then the inverse limit of $\pi_1(X - K)$ as K varies over compact subspaces of X , is the trivial group. Later, Bestvina–Feighn showed that in fact $\text{Out}(F_n)$ is $(2n - 5)$ -connected at infinity. We conjecture that the outer automorphism group of a free product of finite groups is $(n - 4)$ -connected at infinity, where n is the Kurosh rank of the free product. We describe natural spaces and complexes the outer automorphism group acts on, and progress towards this conjecture. (Received January 18, 2020)