1120-60-132 **Mustazee Rahman*** (mustazee@mit.edu). *Factor of IID percolation on trees.*

It is well known that Bernoulli percolation on the d-regular tree has finite clusters so long as the density is at most $1/(d-1)$. Now consider a natural generalizing: an invariant percolation process on the d-regular tree that is a factor of an IID process such that the factor map commutes with automorphisms of the tree. What is the largest density of such a percolation if its clusters are finite?

A simple greedy algorithm provides a lower bound of $(\log d)/d$ for large d. This bound also turns out to be asymptotically optimal in d. We will explain this result and illustrate some ideas behind the proof. (Received February 18, 2016)