Maximal subgroup growth and positively finitely generated profinite groups
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A profinite group $G$ is called positively finitely generated (PFG) if there is an integer $d$ such that $d$ random elements of $G$ generate it topologically. I am going to talk about the conjecture that every open subgroup $H$ of a PFG profinite group $G$ is also PFG. It is known that the PFG condition is equivalent to the group having polynomial maximal subgroup growth.

While unable to prove the conjecture I will show that the maximal subgroup growth of the open subgroup $H$ is at most $n^{\log n}$. This relies on previous results about the number of finite primitive permutation groups of given degree, and about their structure.