1116-20-959   **Rachel K. Skipper*** (`skipper@math.binghamton.edu`), Department of Mathematical Sciences, Binghamton University, PO Box 6000, Binghamton, NY 13902-6000. *The congruence subgroup problem for branch groups.*

Branch groups form an important class of groups, as from this class many examples of groups with consequential algebraic properties arise.

With a branch group, G, just like with many types of infinite groups, one may ask what properties of G can be well understood by considering its finite quotients. This question can be addressed by considering the profinite completion of G, denoted $\hat{G}$, which G embeds into as branch groups are naturally residually finite. But a branch group also embeds into another profinite group whose structure is instead determined by its characteristic action on a tree, $\mathcal{T}$, namely its closure in $Aut(\mathcal{T})$ denoted $\bar{G}$. The congruence subgroup problem asks to compare these two profinite groups and in particular to quantitatively describe the congruence kernel, the kernel of the map $\hat{G} \to \bar{G}$.

In this talk, I will describe these profinite groups and discuss recent efforts towards solving the congruence subgroup problem for branch groups.