Title: Computability and subshifts of finite type on groups

Abstrct: A subshift is a closed, G-invariant subset of A^G for a finite alphabet A; and it is of finite type if it is an intersection of finitely many basic, cylindrical clopen sets.

A classical question, the "domino problem", asks whether given these cylindrical open sets it is decidable whether the corresponding subshift is empty. A conjecture of Baller and Stein asserts that this is decidable if and only if G is virtually free. I will describe recent results (partly joint with Ville Salo) proving partial cases of this conjecture, in particular for metabelian groups, and for word hyperbolic groups.

What lies behind these results are simulation properties, of interest in their own right: every effective subshift (given as an intersection of a computable sequence of cylindrical clopen sets) can be simulated within a subshift of finite type on a larger group.