1060-20-120 **Andrew J Duncan*** (a.duncan@ncl.ac.uk), School of Mathematics and Statistics, Newcastle University, Newcastle upon Tyne, NE46 4LF, England. *Graphs of groups and the Grzegorczyk hierarchy.* Preliminary report.

A group is defined by Rabin to be computable if it has an indexing function, that is a map from the group to the natural numbers, which is decidable and relative to which the multiplication function of the group is computable. Cannonito and Gatterdam refined Rabin's notion by giving each computable group a level on the Grzegorczyk hierarchy. This hierarchy is a stratification of primitive recursive functions into levels such that the rate of growth of values of functions is slower lower down and increases on each succesive level.

Cannonito and Gatterdam show, among other things, that the level of a free product with amalgamation or of an HNN extentsion is no higher than the level of the factor groups plus 1. In this talk I shall describe joint work with Christian Perfect giving analagous results for fundamental groups of graphs of groups. (Received March 25, 2010)