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„Homology growth in regular covers"

Abstract:
Suppose a group G has a finite K(G,1) space X, and suppose we have a sequence of deeper and deeper regular finite sheeted covers of X, so that the corresponding sequence of normal subgroups intersect at {1}. What can we say about homology of these covers? Rationally, the answer is given by the celebrated Lück's Approximation theorem: the normalized Betti numbers of the covers limit to the L^2-Betti numbers of G. I will discuss this and the corresponding notions for torsion part of homology. I will also explain recent computations, joint with Avramidi and Schreve, for right-angled Artin groups, and some consequences.