

WHAT IS THE GEOMETRIC MEANING OF THE VIRTUAL COHOMOLOGICAL DIMENSION OF A GROUP?

IRAKLI PATCHKORIA

ABSTRACT. In this talk we present a triangulated category of proper G -spectra where G is an infinite discrete group with bounded torsion and with finite dimensional $\underline{E}G$. The triangulated category is generated by the orbits with finite isotropy and admits restriction functors to genuine H -spectra for any finite subgroup H of G . We also indicate how a proper G -spectrum gives rise to a Mackey functor for G . This is joint work with Degrijse, Lück and Schwede. We will also discuss a second project, joint with Bárcenas and Degrijse, where we apply this setup to define a notion of stable geometric dimension for proper actions of G . We prove that this notion of dimension coincides with the Mackey cohomological dimension of G . If G is virtually torsion free, the Mackey cohomological dimension is known to equal the virtual cohomological dimension of G . Hence we obtain a geometric interpretation of the virtual cohomological dimension of G .