

INTERMEDIARIES IN BREDON (CO)HOMOLOGY AND CLASSIFYING SPACES

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Abstract: For certain contractible G -CW-complexes and \mathfrak{F} a family of subgroups of G , we construct a spectral sequence converging to the \mathfrak{F} -Bredon cohomology of G with E_1 -terms given by the \mathfrak{F} -Bredon cohomology of the stabilizer subgroups. As applications, we obtain several corollaries concerning the cohomological and geometric dimensions of the classifying space $E_{\mathfrak{F}}G$. We also introduce, for any subgroup closed class of groups \mathfrak{F} , a hierarchically defined class of groups and show that if a group G is in this class, then G has finite $\mathfrak{F} \cap G$ -Bredon (co)homological dimension if and only if G has jump $\mathfrak{F} \cap G$ -Bredon (co)homology.

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