Title

"Polyhedral product functors and the stable decompositions of complements of complex coordinate subspace arrangements and generalized moment angle complexes"

Abstract

A report of joint work with Martin Bendersky, Fred Cohen and Sam Gitler. We investigate a splitting, after one suspension, of a generalized moment angle complex into pieces related directly to the underlying simplicial complex defining it. In the particular case of the complements of complex coordinate subspace arrangements, our result implies a well-known homology result of Goresky-MacPherson, Hochster, Baskakov and Buchstaber-Panov. The decomposition gives also an additive decomposition for the Stanley-Reisner ring of a finite simplicial complex and generalizations of certain homotopy theoretic results of Porter and Ganea. Analogous properties of the polyhedral product functor hold in the setting of the geometric realization of a simplicial space.