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Polyhedral products and their applications

A polyhedral product is a natural subspace of a Cartesian product specified by a simplicial complex. Though they arose from the topological approach to toric geometry, their utility has expanded rapidly in recent years into areas which include: representation theory, combinatorics, geometric group theory, the topology of toric spaces, free groups and monodromy, complements of subspace arrangements, number theory, graph products, quadratic algebras, arachnid mechanisms and homotopy theory. In this talk I shall describe a new approach to their cohomology and discuss a few applications.