

Polyhedral products

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Abstract: The polyhedral product is a functorial construction that assigns to each simplicial complex K on n vertices, and to each pair of topological spaces, (X, A) , a certain subspace, $\mathcal{Z}_K(X, A)$, of the cartesian product of n copies of X . Particularly interesting are the cases when X is a circle and A is a point (toric complexes); X is an interval and A is its boundary (mirror complexes); or X is a disk and A is its boundary circle (moment-angle complexes).

In this talk, I will discuss several homotopy-type invariants associated to such spaces (and some of their coverings), and how to relate these invariants to the algebraic combinatorics of the underlying simplicial complex.