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Towards Hawaiian groups of one-point compactifications of infinite polyhedra

Abstract. It is well known that a weak homotopy equivalence of polyhedra is a homotopy equivalence. There exists a planar noncontractible Peano continuum all of whose homotopy groups are trivial and therefore it is weakly homotopy equivalent to the point, but not homotopy equivalent to the point. The following problem is still open:

Is every weak homotopy equivalence of a one-point compactification of an infinite polyhedron a homotopy equivalence?

We shall show that every weak homotopy equivalence of Hawaiian earrings is a homotopy equivalence (the Hawaiian earring is a one-point compactification of an infinite polyhedron).

We shall also consider the n-dimensional Hawaiian earrings and shall show that every weak homotopy equivalence with respect to the Hawaiian groups of such spaces is a homotopy equivalence.