

## Simplicial inverse sequences in extension theory

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In extension theory, and in particular the theories of dimension and cohomological dimension  $\dim_G$  over an abelian group  $G$ , it is frequently useful to represent a given compact metrizable space  $X$  as the limit of an inverse sequence of compact polyhedra. It would be even more convenient if one was able to choose such inverse sequence so that each polyhedron has a fixed triangulation, and so that all bonding maps are simplicial with respect to these triangulations, but it was shown by Sibe Mardešić that this is not always attainable.

The goal of this talk (based on joint work with Leonard Rubin, University of Oklahoma), is to show some steps towards removing this obstacle, at least for the purposes of extension theory. Namely, given a compact metrizable space  $X$ , we will show how to replace such an  $X$  by a better metrizable compactum  $Z$ . This  $Z$  will come as the limit of an inverse sequence of triangulated polyhedra with surjective simplicial bonding maps that factor in a certain way. There will be a cell-like map  $\pi : Z \rightarrow X$ , and we shall show that if  $K$  is a CW-complex with  $X \tau K$ , then  $Z \tau K$ . Our next goal is to use this space  $Z$  in alternative proofs of resolution theorems in dimension theory.