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Title: Extension theory and the Ψ^∞ operator

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We are going to define for each simplicial complex K, an operator Ψ^∞ on the subcomplexes of K. If one is given a collection of spaces, closed subspaces of them, and maps of the closed subspaces to a subpolyhedron of $|K|$ that extend to maps into $|K|$, then we are going to use the Ψ^∞ operator to help determine a subcomplex of minimal cardinality into which the maps can be extended simultaneously. The question (raised by A. Dranishnikov and J. Dydak) of whether the extension dimension, ${}_{(\mathcal{C},\mathcal{T})}X$, has a countable representative when X is compact and metrizable, $\mathcal{C}$ is the class of compact metrizable spaces, and $\mathcal{T}$ is the class of -complexes is an unsolved problem. We shall define an "anti-basis" for a -complex and use this along with the Ψ^∞ operator to allow one to view this problem from another perspective.

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