

Mapping Cone Construction

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Abstract

Objective of this talk is to attach a long exact sequence to a map of cochain complexes. For a map $f^\bullet : L^\bullet \rightarrow M^\bullet$ of cochain complexes we shall define its mapping cone $Mc(f^\bullet)$. We shall then construct a short exact sequence $0 \rightarrow M^\bullet \rightarrow Mc(f^\bullet) \rightarrow L^\bullet[1] \rightarrow 0$ and get the long exact sequence using the snake lemma. We shall also motivate the definition of mapping cone of a chain complex map from the definition of the mapping cone of a map of topological spaces.