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Section:

6. Topology

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The homology of spaces representing exact cohomology theories

A generalised cohomology theory $M^*(-)$ is *exact* over another such $R^*(-)$ when for any finite space X we have $M^*(X) \cong R^*(X) \otimes_{R*(pt)} M^*(pt)$. All such cohomology theories are represented by infinite loop spaces in the sense that for each k there is an infinite loop space $\underline{M}_k$ such that $M^k(X) \cong [X, \underline{M}_k]$. Our interest is in the relationship between the families of spaces $\{\underline{M}_k\}_{k\in\mathbb{Z}}$ and $\{\underline{R}_k\}_{k\in\mathbb{Z}}$ which represent an exact pair of cohomology theories. A precise statement can be given in homology by investigating the theory of *coalgebraic modules.* These results are joint work with John Hunton.

References: (1) J. Hunton and P. Turner, Coalgebraic Algebra, to appear JPAA. (2) J. Hunton and P. Turner, The homology of spaces representing exact pairs of homotopy functors, to appear in Topology.