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Sommario/riassunto	Recent developments in diverse areas of mathematics suggest the study of a certain class of extensions of C*-algebras. Here, Ronald Douglas uses methods from homological algebra to study this collection of extensions. He first shows that equivalence classes of the extensions of the compact metrizable space X form an abelian group Ext (X). Second, he shows that the correspondence X Ext (X) defines a homotopy invariant covariant functor which can then be used to define a generalized homology theory. Establishing the periodicity of order two, the author shows, following Atiyah, that a concrete realization of K-homology is obtained.