

Weak homotopy types of finite spaces

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The goal of algebraic topology is to understand spaces up to weak homotopy equivalence. To that end, a natural question is to classify finite topological spaces (that is, spaces with finitely many points) up to weak homotopy equivalence. A classical result due to McCord (1966) is that, starting from a finite space, there is a convenient construction of a simplicial complex that is weakly equivalent to the space. Moreover, every finite simplicial complex is weakly equivalent to a finite space via this construction. This result often goes by the name "McCord's theorem". In this talk, I will speak about joint work with Chris Kapulkin on a new proof of McCord's theorem, formulated in the language of abstract homotopy theory.

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