Topology Seminar

John Berman

of UT Austin will be speaking on

Spaces with Rational Euler Characteristic

on April 22 at 4:30 in
MIT Room 2-131

The Euler characteristic is a beloved invariant of spaces which are finite in homology. On the other hand, Baez and Dolan's homotopy cardinality is an invariant of spaces which are finite in homotopy, with applications from group theory to mathematical physics. Baez asks whether these invariants are two faces of the same coin. We will answer Baez's question by constructing an invariant on a class of p-profinite spaces which unifies the Euler characteristic and homotopy cardinality, and we also show that there can be no such invariant without restricting attention to a single prime. The construction uses the Sullivan Conjecture to compute the algebraic K-theory of a category of 'spaces with rational Euler characteristic.'

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