

Topology Seminar

Martin Frankland

of MIT will be speaking on

Quillen cohomology of Π -algebras and application to their realization

on April 26 at 4:30 in
MIT Room 2-131

A Π -algebra is a graded group with additional structure that makes it look like the homotopy groups of a space. Given one such object A , one may ask if it can be realized topologically: Is there a space X such that π_*X is isomorphic to A as a Π -algebra, and if so, can we classify them?

Work of Blanc-Dwyer-Goerss provided an obstruction theory to realizing a Π -algebra A , where the obstructions (to existence and uniqueness) live in certain Quillen cohomology groups of A . What do these groups look like, and can we compute them?

We will tackle this question from the algebraic side, focusing on Quillen cohomology of truncated Π -algebras. We will then use the obstruction theory to obtain results on the classification of certain 2-stage homotopy types, and compare them to what is known from other approaches.