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Higher semiadditive representation and character theory.

Abstract:

In higher algebra, one studies the homotopical analogue of abelian groups, known as spectra. These objects arise naturally (and facilitate great advances) in various mathematical fields from number theory to differential topology. It is a fundamental fact that in the spectral world there are more "primes", which provide an interpolation between zero and positive characteristics. A key property of the local theory at these intermediate primes is higher semiadditivity, which roughly speaking, provides canonical integrals over homotopically finite topological spaces. In this talk, I will discuss a "higher" analogue of representation and character theory, where characteristic zero vector spaces are replaced by spectra localized at any particular intermediate prime, and finite groups are generalized to a homotopically finite version thereof. In particular, I will present a work in progress on the generalization of the "induced character formula" in terms of the higher semiadditive structure and discuss its relationship with topological Hochschild homology.