Oishee Banerjee, November 4, 2022

Title: Stable cohomology of spaces via symmetric (semi)simplicial filtration

Abstract: We construct a spectral sequence quite like Čech-to-derived category spectral sequence for hypercoverings on ΔS, a small category constructed from, and slightly larger than, Δ. In effect this gives a unified proof of old results and new— e.g. C a smooth projective curve of genus g, of unordered configuration spaces, of the moduli space of smooth sections of a fixed $\mathfrak{g}_d^r$ that is m-very ample for some m, some geometric Batyrev–Manin type conjectures over global function fields for weighted projective stacks, complete simplicial toric varieties etc. In the special case when we have a monoid over a graded commutative ring our spectral sequence corresponds to that of the derived indecomposables (in the sense of Galatius–Kupers–Randal—Williams) giving an alternative topological interpretation of the moduli spaces above.