

Bornological Spectra and Bounded Cohomology

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Bounded cohomology of groups was defined by Johnson and Trauber, and extended to all topological spaces by Gromov. It is a homotopy invariant and is important in the study of simplicial volumes of manifolds. Unfortunately computing it for a given space can be a difficult task, as bounded cohomology does not satisfy excision. In particular it does not define a cohomology theory, and is therefore not representable by a spectrum. In this talk I will explain, following Bühler, how one can define a bornological refinement of bounded cohomology which does have good homotopical properties. I will sketch the construction of the categories of bornological and complete bornological spectra of convex type, and explain how (bornological) bounded cohomology should be representable by a certain 'Eilenberg-MacLane' spectrum. Collaborators include Federico Bambozzi, Oren Ben-Bassat, Kobi Kremnizer, and Devarshi Mukherjee.