TOPOLOGY SEMINARS

The loop space homology of a small category

By

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Abstract: In an article published in 2009, Dave Benson described, for a finite group G, the mod p homology of the space $\Omega(BG^\wedge_p)$ — the loop space of the p-completion of BG — in purely algebraic terms. In joint work with Carles Broto and Ran Levi, we have tried to better understand Benson's result by generalizing it. Among other things, we showed that when C is a small category, |C| is its geometric realization, R is a commutative ring, and $|C|^+_R$ is a plus construction of |C| with respect to homologywith coefficients in R, then $H_*(\Omega(|C|^+_R);R)$ is the homology any chain complex of projective RC-modules that satisfies certain conditions. Benson's theorem is then the special case where C is the category associated to a finite group G and $R = F_p$, so that p-completion appears as a special case of the plus construction.

Date: April 8, 2019 Monday
Time: 13:40 – 14:40
Place: SA141 Mathematics Seminar Room

* Tea and cookies will be served after the talk. All are most cordially invited.