Publicacions més rellevants de la línia de recerca:

H-espais, espais de llaços, espais classificadors.

Referència: Castellana, Natàlia; Levi, Ran; Notbohm, Dietrich Homology decompositions for p-compact groups. Adv. Math. 216 (2007), no. 2, 491–534.

Abstract: We construct a homotopy theoretic setup for homology decompositions of classifying spaces of p-compact groups. This setup is then used to obtain a subgroup decomposition for p-compact groups which generalizes the subgroup decomposition with respect to p-stubborn subgroups for a compact Lie group constructed by Jackowski, McClure and Oliver.

Referència: Castellana, Natàlia; Crespo, Juan A.; Scherer, Jérôme On the cohomology of highly connected covers of finite Hopf spaces. Adv. Math. 215 (2007), no. 1, 250–262.

Abstract: Relying on the computation of the André?Quillen homology groups for unstable Hopf algebras, we prove that if the mod p cohomology of both the fiber and the base in an H-fibration is finitely generated as algebra over the Steenrod algebra, then so is the mod p cohomology of the total space. In particular, the mod p cohomology of the n-connected cover of a finite H-space is always finitely generated as algebra over the Steenrod algebra.

Referència: Castellana, Natàlia; Crespo, Juan A.; Scherer, Jérôme Deconstructing Hopf spaces. Invent. Math. 167 (2007), no. 1, 1–18.

Abstract: We characterize Hopf spaces with finitely generated cohomology as an algebra over the Steenrod algebra. We ?deconstruct? the original space into an H-space Y with finite mod p cohomology and a finite number of p-torsion Eilenberg-Mac Lane spaces. We give a precise description of homotopy commutative H-spaces in this setting.