



Laboratoire Angevin de Recherche en Mathématiques

Séminaire de topologie algébrique

lundi 27 mai 2013

Salle I001, LAREMA UMR 6093

Andy Baker (University of Glasgow) - 14h00

Polynomial cohomology Hopf algebras

The ring of quasi-symmetric functions is isomorphic as a Hopf algebra to $H^*(\Omega\Sigma\mathbb{C}P^\infty)$ and the Ditters conjecture asserts that this is a polynomial algebra. I'll explain how to use the Eilenberg-Moore spectral sequence to prove results of this type for $H^*(\Omega X)$, for a space X with certain properties. This gives a variation on previous work with Birgit Richter in the case of $X = \Sigma\mathbb{C}P^\infty$.

Nick Kuhn (University of Virginia) - 15h30

The mod 2 homology of infinite loopspaces

A spectrum X is a sequence of spaces: X_0, X_1, \dots , with each space homotopy equivalent to the loop space of the next on the list. The homology of X is then the colimit of the homology of these spaces. We discuss how to try to recover the mod 2 homology of X_0 , a highly structured object, from the mod 2 homology of X , viewed as a right module over the Steenrod algebra. Our method is to use a spectral sequence coming from a Goodwillie tower. In good cases, the end of the spectral sequence is determined by derived functors of destabilization applied to the homology of X . (This is joint work with Jason McCarty.)