Séminaire d'algèbre, topologie et géométrie
Jeudi 16 avril à 15h30
Salle I

Dmitry Kaledin

Steklov Institute Moscou

Different kinds of cyclic homology.

Periodic cyclic homology is defined by taking the product-total complex of a certain bicomplex. For algebras over Q, taking the sum-total complex of the same bicomplex gives 0. It has been suggested by Kontsevich some years ago that in char p, the sum-total complex is a non-trivial and interesting invariant. At the time, the suggestion was not pursued seriously ; however, recently a very similar phenomenon appeared in the work of Beilinson and Bhatt on p-adic Hodge theory. I want to revisit the subject and follow through on Kontsevich's idea, both for algebras and DG algebras (where there are even more possibilities for interesting theories, five in total). I will also explain how this is related to the non-commutative Hodge-to-de Rham degeneration.