

Titre: Adams resolutions in modular representation theory

Abstract:

Let  $G$  be a finite group and  $k$  be a field of characteristic  $p$ . About twenty-five years ago, Carlson developed a theory of varieties for finitely generated  $kG$ -modules that has proved fundamental in modular representation theory. In the nineties, Benson, Carlson and Rickard generalised this to infinitely generated  $kG$ -modules. What remained obscure in that theory was how to compute varieties in terms of cohomology. A conjecture was formulated around 2000, and it was finally proved last Autumn in by Benson, Iyengar and Krause. I shall give a report on this work, and the central role played by injective resolutions over the cohomology ring. The realisation of these in the stable homotopy category plays a role analogous to that played by Adams resolutions in stable homotopy theory.