

## Local structure of finite groups and their $p$ -completed classifying spaces

*vendredi 14 octobre 2016 15:00 (50 minutes)*

I plan to describe the close connection between the homotopy theoretic properties of the  $p$ -completed classifying space of a finite group  $G$  and the  $p$ -local group theoretic properties of  $G$ . One way in which this arises is in the following theorem originally conjectured by Martino and Priddy: for finite groups  $G$  and  $H$ ,  $BG_p^\wedge \simeq BH_p^\wedge$  if and only if  $G$  and  $H$  have the same  $p$ -local structure (the same conjugacy relations among  $p$ -subgroups). Another involves a description, in terms of the  $p$ -local properties of  $G$ , of the group  $\text{Out}(BG_p^\wedge)$  of homotopy classes of self equivalences of  $BG_p^\wedge$ .

After describing the general results, I'll give some examples and applications of both of these, especially in the case where  $G$  and  $H$  are simple Lie groups over finite fields.

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