Christine Vespa, École Polytechnique Fédérale de Lausanne

Functor category associated to quadratic spaces over $\mathbb{F}_2$

The category $F(p)$ of functors from the category $Ef$ of finite $F_p$-vector spaces to the category $E$ of all $F_p$-vector spaces is connected to several areas of mathematics. An important algebraic motivation for the particular interest in the category $F(p)$ follows from the link with the modular representation theory and the cohomology of finite general linear groups. A fundamental result obtained by Betley-Suslin relates the calculation of extension groups in the category $F(p)$ with certain stable cohomology groups of general linear groups. It is natural to seek to construct other categories of functors that play a similar role for other families of algebraic groups and, in particular, for the orthogonal groups.

In this talk I will explain the construction of the functor category $F_{\text{quad}}$, which has some good properties as a candidate for the orthogonal group over the field with two elements and I will give several results about the structure of this category.

Contact address: christine.vespa@epfl.ch