

From equivariant K-theory to equivariant KK-theory via restricted Yoneda and Mackey functors

Ivo Dell'Ambrogio

Universität Bielefeld-Germany.

I will explain the general and natural homological techniques that one can use to compute (among other things) the Hom groups in a triangulated category, by way of a restricted Yoneda functor. As a (perhaps exotic) illustration, I will consider the Kasparov category of a finite group G , where the objects are C^* -algebras equipped with a G -action by $*$ -isomorphisms and the Hom sets are Kasparov's bivariant K -theory groups $KK^G(A, B)$. By applying the general techniques, we obtain a new universal coefficient spectral sequence and a new Künneth spectral sequence abutting to $KK^G(A, B)$ and $K^G(A \otimes B)$, respectively, which can be computed in a suitable nice abelian category of Mackey functors for G . These results generalize the classical and extremely useful universal coefficient and Künneth theorems of Rosenberg-Schochet, which are the case $G = 1$.