

A note on internal actions in homological and semi-abelian categories

Nelson Martins Ferreira *

It is well known that the category of internal actions, in a semi-abelian category, is equivalent to the category of points. This equivalence is the key to obtain the categorical notion of a semi-direct product [1]. The desired equivalence does not hold in a homological category in general. In this talk we find necessary and sufficient conditions in order to have the desired equivalence and compare it with the cases of homological and semi-abelian categories. We also introduce the notion of strict action and prove that the equivalence between points and strict actions holds in every homological category.

REFERENCES

- [1] D. Bourn and G. Janelidze, *Protomodularity, descent and semidirect products*, Theory Appl. Categ. 4 (1998) 37–46.

*Joint work with Manuela Sobral.