SEMIDIRECT PRODUCTS AND INTERNAL ACTIONS

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In this talk we present some of the results obtained in the context of the MCANA Project, namely:

- The characterization of pointed categories which admit semidirect products, given in [1]. These categories are, in particular, protomodular categories.
- The generalization, presented in [2], of the notion of semidirect product to some non-protomodular contexts, inspired in the case of monoids and, more generally, of any pointed variety of universal algebras, cases where the internal actions have an additional property.
- Examples of categories with such generalized semidirect products include the normal categories, in the sense of [3], as well as a category which is neither protomodular nor Mal'cev.

References

[1] N. Martins-Ferreira, M. Sobral, *On categories with semidirect products*, J. Pure Appl. Algebra 216 (2012) 1968–1975.

[2] A. Montoli, N. Martins-Ferreira, M. Sobral, *Semidirect products and the Split Short Five lemma in normal categories*, Appl. Cat. Structures 22 (2014), 687–697.

[3] Z. Janelidze *The pointed subobject functor, 3×3 lemma, and subtractivity of spans*, Theory Appl. Categ. 23 (2010), No. 11, 221–242.