Seminari Al@Bicocca

You are all welcome to the next bite of the series "Al@Bicocca" which is meant to give you a small taste of the Algebra at Bicocca and beyond

12 December 2019

Andrea Montoli Università degli Studi di Milano

3:00 p.m.

Room 3014 - U5 Department MatApp University of Milan-Bicocca Via R. Cozzi 55 Milano (IT)

Organizers: Ilaria Castellano Claudio Quadrelli

"Homological properties of Schreier extensions of monoids"

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Abstract: In order to extend to monoids the classical equivalence between group actions and split extensions, the notion of Schreier split extension of monoids was introduced. A particular role is played by the so-called special Schreier extensions, namely those whose kernel is a group. We first give a description of Baer sums in terms of factor sets: we show that special Schreier extensions with abelian kernel correspond to equivalence classes of factor sets, as it happens for groups. Secondly, we introduce a push-forward construction for special Schreier extensions with abelian kernel in order to give an alternative, functorial description of the Baer sum, opening the way to an interpretation of the cohomology of monoids with coefficients in modules (which is a generalization of the classical Eilenberg-Mac Lane cohomology of groups) in terms of extensions. Another advantage of this functorial approach is that it can be extended to general Schreier extensions, without the assumption that the kernel is a group. We describe a classification of all such extensions in cohomological terms.