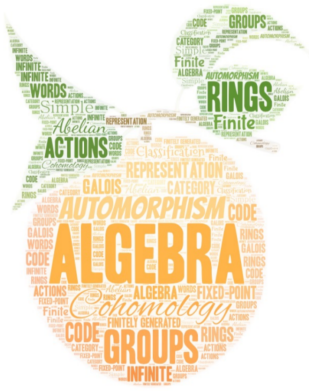
Al@Bicocca seminar

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



4 May 2026
15.00 (CEST)

Alessio Savini
Università degli Studi di Milano–Bicocca

Group actions, groupoids and their cohomology

Abstract: Given a finitely generated group G acting in a sufficiently nice way on a probability space (X, m), measured group theory studies the interplay between the algebraic properties of G and dynamical properties of the action on (X, m). For instance, one can look at the macroscopic structure of G-orbits. For G acting on (X, m) and H acting on (Y, n), we say that the actions are orbit equivalent if there exists an isomorphism of measure spaces between X and Y which preserves orbits. Orbit equivalence is an equivalence relation whose classes are quite difficult to understand. Actions of uncountable amenable groups are all orbit equivalent, whereas higher rank lattices in Lie groups have a far more rigid behaviour, since the existence of an orbit equivalence implies the existence of an isomorphism between the ambient Lie groups.

As usual in Mathematics, we would like to introduce a simpler invariant to study orbit equivalence classes. This time we are lucky enough to translate the study of orbit equivalence into the more powerful language of measured groupoids. The latter are a generalization of groups which gives a unifying approach to equivalence relations, groups and groups actions, foliations and so on. For measured groupoids, we defined a cohomological theory which is precisely our desired invariant. In the case of group actions, we proved a Fubini–Tonelli like theorem that gives us new information about the orbit equivalence class.

Joint work with Filippo Sarti.

Online venue: Webex
University of Milano-Bicocca
Piazza dell'Ateneo Nuovo, 1
Edificio U6
Milano (IT)
Aula U6-17

Organizers:
Jessica Anzanello
Julian Feuerpfeil
Marco Barbieri
Nicola Grittini
Ettore Marmo
Francesco Matucci

Website