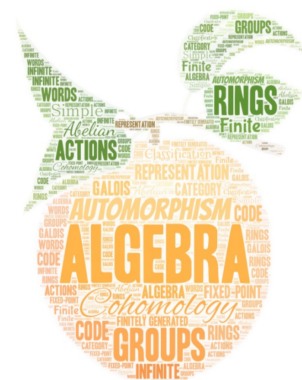# Al@Bicocca seminar

You are all welcome to the next
**"Al@Bicocca Flash Workshop!"**
with **two** algebra seminars, at Bicocca



16.00 - 17.00:

## Sofiya Yatsyna
University of London

## On certain homological invariants of TDLC groups

**Abstract:** In extending notions from Farrell-Tate cohomology, Gedrich and Gruenberg (1987) introduced two new interesting homological invariants for a ring: SILP, the supremum of the injective lengths of the projectives, and SPLI, the supremum of the projective lengths of the injectives. Particularly, they showed that given a suitable commutative ring and group, if SPLI is finite, then SILP is also finite. Emmanouil (2010) generalises this result and shows that for any group, SILP and SPLI are equal over the integers. This talk will explore the development of an analogous theory for the category of totally disconnected locally compact groups and discuss whether projective and injective modules are really dual.

17.00 - 18.00:

## Nowras Otmen
Università degli Studi di Padova

## Probabilistic identities, analytic groups and free constructions

**Abstract:** Profinite groups can be endowed with a probability measure, which allows one to investigate probabilistic questions in this class of topological groups. A particularly interesting instance is that of a group with a probabilistic identity, that is, when a group satisfies a word with positive probability. In this seminar, I will investigate the structural implications of satisfying a probabilistic identity in two classes of groups: analytic groups and fundamental groups of graphs of groups. This is joint work with Steffen Kionke, Tommaso Toti, Matteo Vannacci and Thomas Weigel.