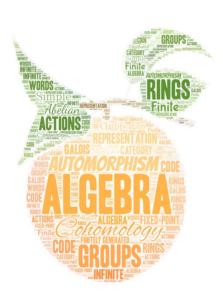# AI@Bicocca seminar

You are all welcome to the next bite of the series

"**AI@Bicocca**"

which is meant to give you a small taste of the

Algebra at Bicocca and beyond

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Bases for permutation groups

Abstract: Let G be a permutation group on a finite set Ω. A base for G is a subset of Ω with trivial pointwise stabiliser, and the base size of G, denoted $b(G)$, is the minimal size of a base for G. This classical concept has been studied since the early years of permutation group theory in the nineteenth century, finding a wide range of applications.

Recall that G is called primitive if it is transitive and its point stabiliser is a maximal subgroup. Primitive groups can be viewed as the basic building blocks of all finite permutation groups, and much work has been done in recent years in bounding or determining the base sizes of primitive groups. In this talk, I will report on recent progress of this study. In particular, I will give the first family of primitive groups arising in the O'Nan-Scott theorem for which the exact base size has been computed in all cases.