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



University of Victoria

Equivalence relations of quadratic forms in characteristic two

Abstract: It is well-known that quadratic forms can be diagonalized over fields and that they are in a one-to-one correspondence with bilinear forms; the algebraic theory of quadratic forms is built on these two properties. But there is a catch – division by two is required. Over a field of characteristic 2, neither of the two properties holds, and the whole quadratic form theory needs to be rebuilt from scratch.

The equivalence relations of quadratic forms that are usually studied and compared are: similarity (two quadratic forms only differ by a scalar multiple), birational equivalence (the corresponding quadrics are birationally equivalent), stable birational equivalence (the corresponding quadrics are stably birationally equivalent), and motivic equivalence (we skip the explanation).

In the talk, we dive into the parallel universe of quadratic forms in characteristic 2. After a brief introduction, I will focus on the equivalence relations of quadratic forms, and the development of the results in the last five years. Instead of motivic equivalence, which is unavailable in our universe, we define Vishik equivalence: a purely algebraic analogue of motivic equivalence. The main question of the talk will be: Are Vishik equivalent quadratic forms always similar? (Spoiler: It depends.)



24 October 2024 14.00 (UTC+1)

Online venue: WebEx

University of Milano-Bicocca Via R. Cozzi 55 Milano (IT)

Organizers:

Marco Barbieri Marco Fusari Nicola Grittini Ettore Marmo Francesco Matucci Matteo Tarocchi

Website 🌘