A.D. 1308
unipg
DIPARTIMENTO
DI MATEMATICA E INFORMATICA

Siete invitati al seminario di ricerca presso il Dipartimento di Matematica e Informatica, dal titolo:

The orthogonal group of a quadratic form

📍 **Aula A3**
🗓️ **8 aprile 2026**
🕒 **Ore 16:00 – 17:30**

Speaker:
Prof. Karim Johannes Becher
Università di Anversa

Abstract:
In this lecture, I will discuss the group of automorphisms of a quadratic form q over a field.
This is a classical example of a linear algebraic group, called the orthogonal group and denoted O(q).
It is generated by the hyperplane reflections, more precisely, if n is the dimension of q, then every element of O(q) is a product of no more than n reflections.
In the first part, I will motivate and explain this result.
In the second part, I will show how Ernst Witt (in 1937) used the hyperplane reflections to prove a cancellation law for quadratic forms, leading to the construction of the so-called Witt ring of a field.

To follow this lecture, only knowledge on fields and vector spaces is required, while some prior exposure to symmetric bilinear forms (e.g. scalar products) can be helpful. After the lecture, we can discuss what topics to focus on in possible follow-up lectures.

Cordiali saluti

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