



Dottorato di ricerca in Matematica

Avviso di ciclo di seminari

Si informa che il Prof. Daniel Bulacu, Università di Bucarest (Romania), terrà un ciclo di seminari dal titolo:

"Galois Theory: from groups and forms to descent theory and extensions" della durata di otto ore, nei seguenti giorni:

Martedì 4 luglio, dalle 16 alle 18, aula F2 del Chiostro

Giovedì 6 luglio, dalle 16 alle 18, aula F2 del Chiostro

Martedì 11 luglio, dalle 16 alle 18, aula F3 del Chiostro

Giovedì 13 luglio, dalle 16 alle 18, aula F3 del Chiostro

Gli incontri saranno on site e online, link permanente per i quattro seminari:

<https://meet.google.com/jyo-iqwi-xkn>

Di seguito una breve descrizione del corso.

Description of the Course.

The classical Galois theory dates back to 1830, but it took more than 100 years for it to be reformulated (by Artin) in the language of module theory. Artin's criterion that decides when a field extension K/k is Galois allows to extend the classical Galois theory to Hopf algebras. This was initiated by Chase and Sweedler in 1969 in the commutative case, the general case being considered by Kreimer and Takeuchi in 1981. Today Hopf-Galois extensions appear in various branches of mathematics and physics, being also known as dual algebraic versions of non-commutative fiber spaces (the notion of quantum fiber space can be introduced as a module associated with a Hopf-Galois extension).

The purpose of this course is to make the transition from the classical Galois theory to the Hopf-Galois theory and to present some directions of study for the latter. Briefly, the content of the course is as follows:

- Classical Galois theory.*
- Extensions of fields, extensions of separable Galois fields without groups, strongly graded rings, cross products, affine group schemes.*
- Relevant examples of Hopf algebras.*
- Hopf-Galois extensions and examples.*
- Descent theory.*
- Hopf-Galois theories in various categories.*

Docenti e studenti sono invitati ad intervenire.

Il Responsabile Scientifico Prof. Claudia Menini