Colloquio De Giorgi

8 October 2025
4:00 pm

SERGE CANTAT
Université de Rennes

Degree Growth

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Pisa

Abstract: Consider a polynomial transformation f of a vector space V and iterate f; that is, compose f with itself, and then with f again, etc. Doing so, one gets a sequence of polynomial transformations f^n. Computing the degree of the formulas defining f^n, one obtains a sequence of integers deg(f^n). The problem I will discuss is : what type of sequences do we obtain in this way?
For instance, in dimension 2, the degree of f(x,y)=(y,xy) is 2, then the degree of f^2(x,y)=(xy, xy^2) is 3, then f^3(x,y)=(xy^2,x^2y^3) has degree 5, … and the degree of f^n is given by a sequence which is well known in Pisa.
The question is related to dynamical systems, basic algebraic geometry, and some number theory.

No previous knowledge will be assumed.

Web site: ***https://indico.sns.it/event/120/***

The event will take place in person.

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