

## SEMINARIO DI GEOMETRIA

6 march 2019, h.15.00-16.00

Politecnico di Torino,  
Dipartimento di Scienze Matematiche,

**O. Benoist**

(Ecole normal superieur)

On the Luroth problem over non-closed fields.

In this talk we use the Clemens-Griffiths method to construct smooth projective three-folds, over any field  $k$  admitting a separable quadratic extension, that are  $k$ -unirational and  $\bar{k}$ -rational but not  $k$ -rational. When  $k = \mathbb{R}$ , we can moreover ensure that their real locus is diffeomorphic to the real locus of a smooth projective  $\mathbb{R}$ -rational variety and that all their unramified cohomology groups are trivial.

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