## HORAIRES SEMAINE 1

<h2>École à Luminy</h2>


**Cyril Demarche:** *Cohomological obstructions to local-global principles*

Hasse proved that for quadrics the existence of rational points reduces to the existence of solutions over local fields. In many cases, cohomological constructions provide obstructions to such a local to global principle. The objective of these lectures is to give an introduction to these cohomological tools.

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*Date*: Lundi 15 avril–Dimanche 21 avril.

**David Harari:** *Galois cohomology, arithmetic duality and obstructions to local-to-global principles for rational points*

A general survey about Galois and étale cohomology, arithmetic duality theorems, and Poitou-Tate exact sequences, with an emphasis on applications to local-to-global principles.

**Emmanuel Peyre:** *Points of bounded height*

These talks will start with an introduction to the notion of heights before giving a survey on the program of Manin about the asymptotic behaviour of rational points of bounded height on varieties.

**Damaris Schindler:** *Interactions of analytic number theory and geometry*

A general introduction to the state of the art in counting of rational and integral points on varieties, using various analytic methods with the Brauer–Manin obstruction.