



Du  
**16**  
JAN.  
2013

14h00  
-  
17h00

## **RÉGA**

### **Yuri Manin "Quantum cohomology, motives, derived categories I"**

IHP  
Salle 314

INSCRIPTION

Yuri Manin (Max-Planck-Institute for Mathematics)  
Quantum cohomology, motives, derived categories I & II

Quantum Cohomology - and Mirror Symmetry - started in 1991, with the discovery made by a group of physicists of a remarkable identity for the generating series for the number of rational curves of various degrees on a quintic threefold.

When algebraic geometers started studying this problem it turned out that even the correct definition of curve count is a highly non-trivial task. After several years of arduous efforts, it turned out that such a count is a by-product of a very vast new structure involving ALL smooth projective varieties. Namely the motive, in Grothendieck's sense, of any such variety is acted upon by the motives of Deligne-Mumford stacks of stable curves with marked points, and this action is operadic.

URL de la page : [https://www.ihp.fr/fr/agenda/yuri-manin-quantum-cohomology-motives-derived-categories-i&is\\_pdf=true](https://www.ihp.fr/fr/agenda/yuri-manin-quantum-cohomology-motives-derived-categories-i&is_pdf=true)

In my brief minicourse, I will give a review of basic structures involved in this picture. I will discuss the problem: how can we describe the action of the operad of moduli spaces upon its own members, e.g., what is quantum cohomology of  $\bar{M}_{0,n}$ ? Finally, I will touch upon the recent generalization of motives, in which the motive of a manifold is represented by its coherent derived category, or more sophisticated enhanced dg category. How can we extend Quantum Cohomology to this universe?



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### **HORAIRES**

L'institut :

- lundi au vendredi de 8h30 à 18h,
- fermé les jours fériés.

Le musée - Maison Poincaré :

- lundi, mardi, jeudi et vendredi de 9h30 à 17h30,
- samedi de 10h à 18h,
- fermé le mercredi et le dimanche.