



Newcomer day

My PhD subject :

From quantum gravity to field theories on quantum space-times

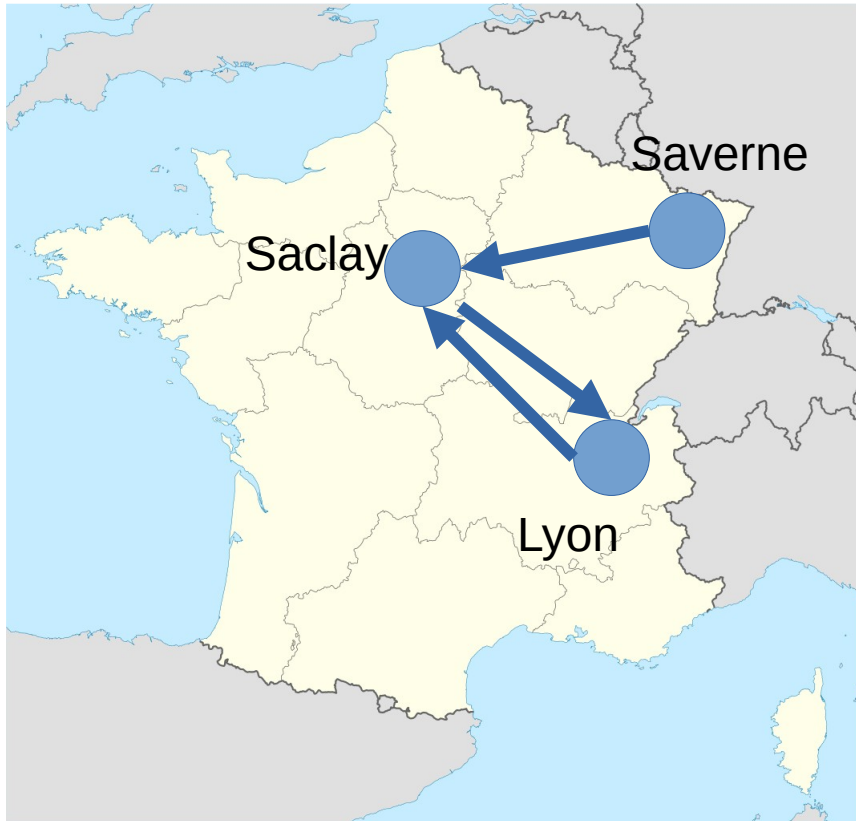


Me : **Valentine Maris**

My supervisors : **Jean-Christophe Wallet and Etera Livine**

Date : **27/03/2024**

A little trip through France



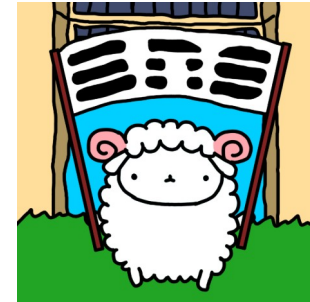
Born in Saverne,
in Elsass (which is not Germany!!!)



Move to Saclay for study
at CentraleSupélec



Move to Lyon to do a
M2 of physics



Come back to Saclay for thesis



Algebras of non commutative operators

Differential geometry

???

QUANTUM
FIELD THEORY

GENERAL
RELATIVITY

Solution ? A common mathematical formalism : noncommutative geometry

What I concretely do ?

In Orsay: Study noncommutative gauge theory in deformed Minkowski space

ρ -Minkowski space (ρ deformation parameter, $[\rho] = m$)

$$[x_0, x_1] = i\rho x_2, \quad [x_0, x_2] = -i\rho x_1, \quad [x_1, x_2] = [x_3, x_\mu] = 0$$

In Lyon: Look at unitarity of noncommutative theory coming from loop quantum gravity

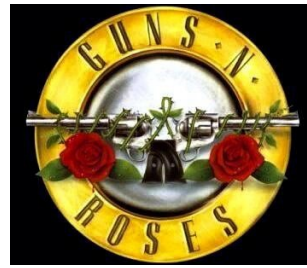
Optical theorem

$$2\text{Im} \left[\text{Diagram 1} \right] = \int d\Pi_k \text{Diagram 2} \text{Diagram 3}$$

About me :

I spend a lot of time doing role play :

- Murders
- Live action role-playing games (LARP)



I like several and very different music styles :

- Metal
- Power Metal
- Symphonic Metal
- Progressive Metal
- German Metal
- Medieval Metal
- ... Metal
- Rock



The End