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Age : 22 years old

Nationality : French

## EDUCATION

2014-2015 Master 2 sciences de la matière, spécialité physique des particules (teaching delivered in english)

Second year of master degree in particle physics, with honors (rank : 2/10)  
Université Blaise Pascal, Clermont-Ferrand

2013-2014 Master 1 sciences de la matière, spécialité physique des particules  
First year of master degree in particle physics, with honors (rank : 1/39)  
Université Blaise Pascal, Clermont-Ferrand

2011-2013 Licence sciences de la matière, spécialité physique-chimie  
Three-year degree in physics-chemistry  
Université Blaise Pascal, Clermont-Ferrand

2010-2011 1ère année Classe Préparatoire aux Grandes Ecoles  
Lycée du parc, Lyon

## PROFESSIONAL EXPERIENCE

March/June 2015 Internship in the ATLAS group of Laboratoire de Physique Corpusculaire (Clermont-Ferrand), dealing with "Probing a dark matter model leading to a same-sign top signature with ATLAS"

The work during this internship was split between a phenomenological part and an analysis based on a same-sign top signature. To perform this, a simulation of the signal was generated by using MadGraph and

Pythia. For the phenomenological study, the importance of several parameters of the model was determined by plotting, with root, and comparing distributions of kinematical variables for different parameters configurations.

The analysis aimed to determine the discovery potential of the model at 13 TeV studying a same-sign dilepton final state. Simulated data was generated for backgrounds, which enabled to study expected distributions for signal and backgrounds and thus determine a maximally discriminant variable. Then, a statistical tool, based on CLs method, was used to determine excluded signal excluded cross-sections. This was made following two methods.

First by optimising a selection over the most discriminant variable and by counting signal and background events remaining after selection. Then by considering the shapes of signal and backgrounds distributions.

April/June 2014 Internship in the ATLAS group of Laboratoire de Physique Corpusculaire (Clermont-Ferrand), about "Studying the sgluon discovery potential with the ATLAS detector"  
The goal of this internship was to develop an analysis at 8 TeV, using ATLAS Monte Carlo samples, to search for sgluon, a hypothetical scalar boson predicted in some SUSY models. Distributions for signal and backgrounds were plotted with for several kinematical variables, and a set of discriminant variables was determined. This set was then optimised to obtain a significance as good as possible, and excluded cross-sections for several sgluon mass hypothesis were computed.

## SKILLS

Languages ENGLISH : fluent  
ITALIAN : basic knowledge

Computing C++ language

ROOT software

Introduction to labview