



Theraa TORK

My story with WISHEPP





It all start from An-Najah with WISHEPP



← WISHEPP 2016

| | | | |
|------|---|--------------------------------------|--------|
| ناجح | 0 | الفصل الثاني 2017/2016 | 409998 |
| A | 3 | تحديد المسار | 422541 |
| | 3 | الفيزياء النوويه والدقائق الاولييه 1 | |
| | | معدل الفصل: 4.00 | |

← Master : General Physics at An-Najah National university.

Trans-European School of high energy physics (TESHEPP) 2017



Student presentation

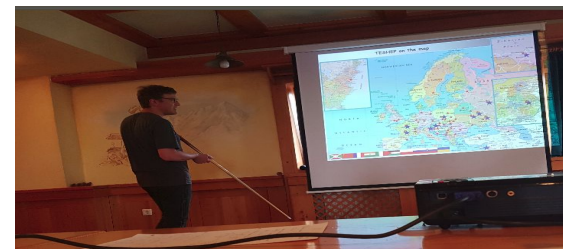


Discussions

My first step outside Palestine



Slovenia 



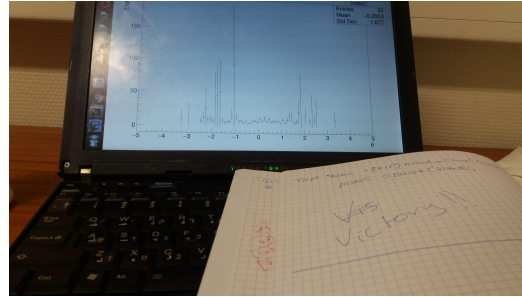
International students 

Master thesis @ LAL (2018)

5 months internship 2018



@ Work



Make progress ! 🧘🏻 🏆



@home



Paris

CERN summer school 2018



CERN == European Organization for Nuclear Research

Your CERN Non-Member State Summer Student Application ▶ Inbox x



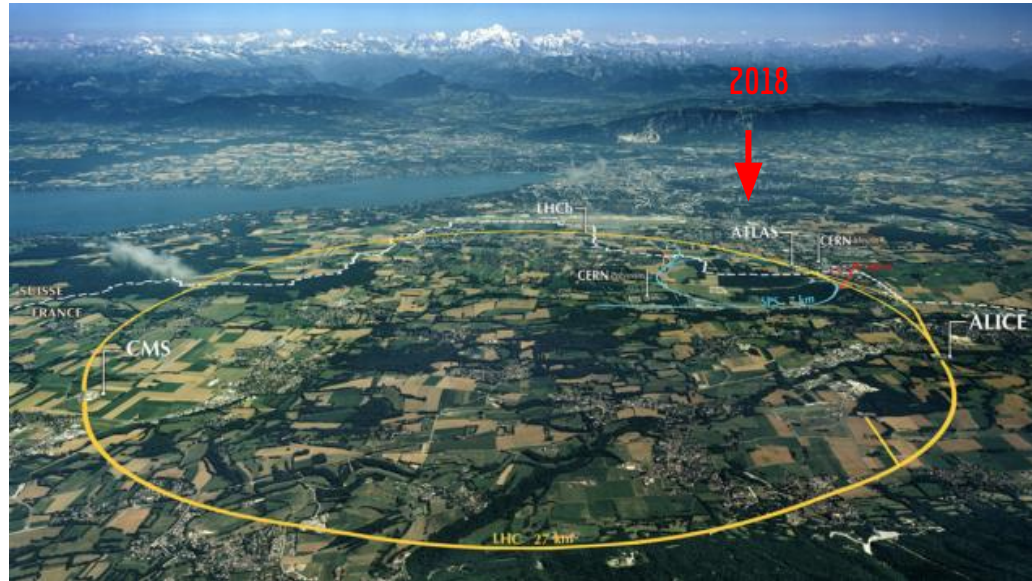
nms.summerstudent@cern.ch
to me ▾

Dear Ms. Tork,

Congratulations!

You have been selected as one of the Non-Member State Summer Students in 2018!

Accepted! 🎉🎉



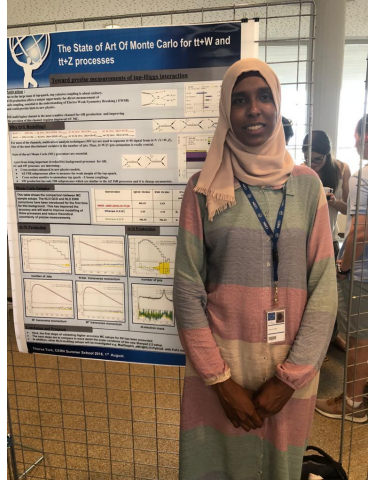
CERN summer school 2018



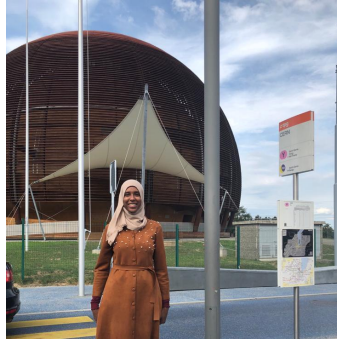
CERN == European Organization for Nuclear Research

- Lectures in several topics in high energy physics for 1 month.
- 2 months internship with ATLAS collaborations.
- CERN summer school is an annual event at cern. More information can be found here :

<https://careers.cern/summer>



Poster session !



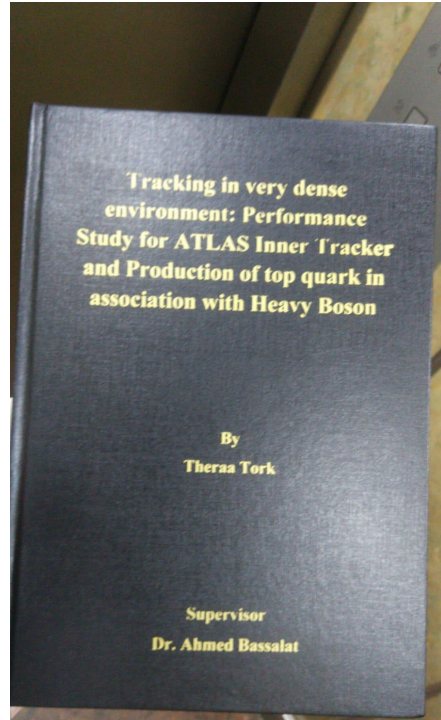
@ The Globe



With BOHR !



Master: General Physics



Master : General Physics at An-Najah National university.

- [Graduate Faculty : Physics](#) (link)
- Master thesis :
 - Supervised : Dr. Ahmed Bassalat (NNU) and Dr. David Rousseau (LAL).
 - Title : Tracking performance of ATLAS inner tracker.

LHCb internship @ LAL

```
AngularStudyToys.C SignalToys.C B2zeekStarFullFit.C FitAngleAccept.C rfb01_mcbstudy.C  
Theresa_Stage / macrows / B2zeekStarFullFit.C  
68 //-----  
69 void B2zeekStarFullFit() {  
70  
71   gROOT->ProcessLine("x lhcbsty/le.C");  
72 }
```



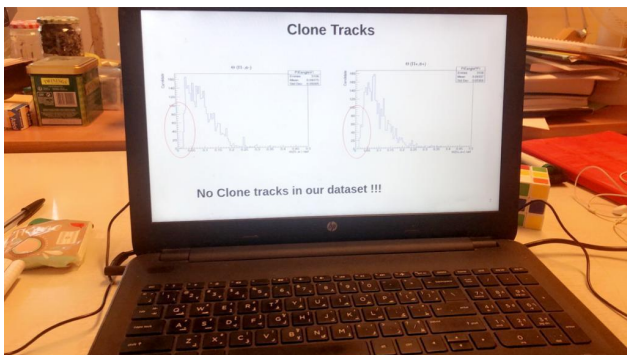
Through WISHEPP School, I got scholarship to do an internship at IJCLab.



LHCb internship @ LAL

```
Theras_Stage > macrws > B02eeKstarFullFit.C
68 //-----
69 void B02eeKstarFullFit() {
70
71   gROOT->ProcessLine(".x lhcbstyle.C");
72
73   // The definition of the applied cuts
74   TString LBL = "[E1_L0ElectronDecision_T05 == 1 || E2_L0ElectronDecision_T05 == 1]";
75   TString B0Mass = "4800 < B0_DTF_PV_M 66 B0_DTF_PV_Mc 5400";
76   TString q2_Low = "3Ps_M < 10";
77
78   TString q2_EE_M = "1000 < 3Ps_M 66 3Ps_M < 6000";
79
80
81
82   //Read variables : observables
83
84   RooRealVar* B0_M = new RooRealVar("B0_DTF_PV_M", "m(e+)(-)(K*)(*)", 4800., 5400., "MeV/c^2");
85   RooRealVar* cosThetaK = new RooRealVar("cosThetaK", "cos(theta_K)", -1., 1.);
86
87   // fill the dataset
88   //Pick up the tree
89   TChain* tree = new TChain("noqNoPK_DT");
90   tree->AddFile("../Theras/LAL/Theras_Stage/RootFiles/Bd2XtEE_CL_R1.root");
91   RooDataSet datasetFinal("datasetFinal", "datasetFinal", RooArgSet(*B0_M, *cosThetaK), Import(*tree));
92   RooDataSet datasetComb("datasetComb", "datasetComb", RooArgSet(*cosThetaK), Import(*tree));
93
94   //Create the pdf
95   // Signal PDF : Needs angular efficiency
96   // parameters for the angular efficiencies
```

Through WISHEPP School, I got scholarship to do an internship at IJCLab.



Master: NPAC , Erasmus + Fund

NPAC == Nuclear, particle , Astroparticle and Cosmology



Master 2 : Nuclear, particle , Astroparticle and Cosmology (NPAC).

Paris-Saclay university
[M2 presentation | NPAC](#)

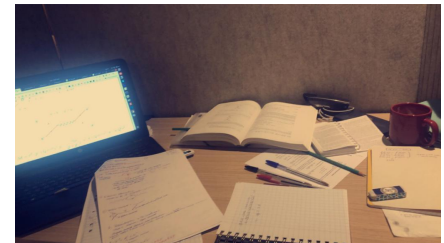
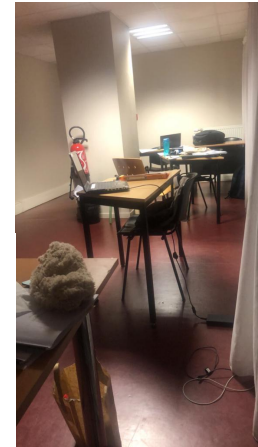
Master thesis :Supervised by: Zaida Conessa and Christophe suire.

Charmonium production with ALICE at LHC.

- 1st university in the world in mathematics
- 1st University in Europe in physics (9th in the world)
- 1st University in France in 12 disciplines (medicine, agriculture etc...)
- In engineering sciences, the university ranks among the best universities in the world, especially in automation (29th) and control and telecommunications (23rd).

ShanghaiRanking's Global Ranking of Academic Subjects 2020 - Mathematics 2020

| World Rank | Institution* | Country/Region | National/Regional Rank | Total Score | Score on CI |
|------------|---|----------------|------------------------|-------------|-------------|
| 1 | Paris-Saclay University | FR | 1 | 362.9 | 87.0 |
| 2 | Princeton University | US | 1 | 354.3 | 71.4 |
| 3 | Sorbonne University | FR | 2 | 308.3 | 100.0 |
| 4 | Stanford University | US | 2 | 301.6 | 66.1 |
| 5 | University of Cambridge | UK | 1 | 301.4 | 63.2 |
| 6 | Massachusetts Institute of Technology (MIT) | US | 3 | 293.5 | 80.0 |
| 7 | University of Oxford | UK | 2 | 292.3 | 78.2 |
| 8 | New York University | US | 4 | 288.4 | 62.0 |
| 9 | ETH Zurich | CH | 1 | 271.9 | 71.3 |
| 10 | PSL University | FR | 3 | 269.8 | 72.2 |



PhD : Now !



Theraa in wonderland

Mesure de la production de double charme avec ALICE auprès du LHC par Theraa Tork

Projet de thèse en Physique hadronique

Sous la direction de Zaida Conesa del valle et de Christophe Saur.

Thèses en préparation à [université Paris-Saclay](#), dans le cadre de [Ecole doctorale Particules, Hadrons, Énergie et Noyau](#), [Instrumentation, Imagerie, Cosmos et Simulat.](#), en partenariat avec [Laboratoire de Physique des deux Infinis Irène Joliot-Curie \(laboratoire\)](#) et de [Faculté des sciences d'Orsay](#) (réfèrent depuis le 01-10-2020).

Description en français

Description en anglais

Titre traduit

Double charm production measurements with ALICE at the LHC

Résumé

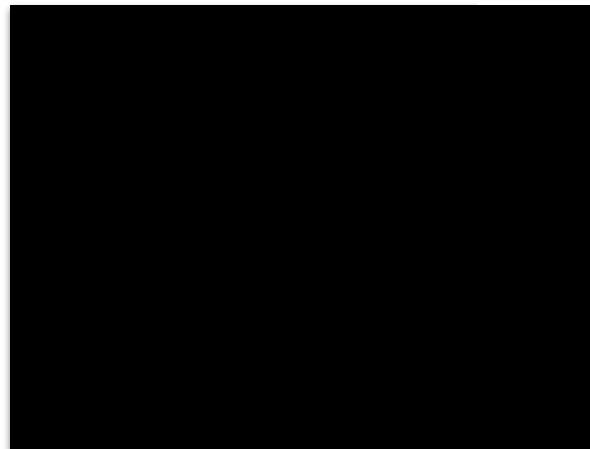
The ALICE experiment at the LHC is dedicated to the study of the Quark-Gluon Plasma (QGP), a state of matter in which quarks and gluons, the fundamental blocks of nuclear matter are deconfined. Quantum Chromodynamics predicts a phase transition between ordinary nuclear matter and the QGP for an energy density of about $1-2 \text{ GeV}/\text{fm}^3$ and a temperature of about 200 MeV . The Universe may have gone through a QGP state a few microseconds after its formation. Ultra-relativistic heavy-ion collisions can create in the laboratory the extreme temperature and energy density conditions necessary to form the QGP. The created medium behaves as a quasi-perfect liquid of strongly coupled partons. Among the observables that probe the formation of the QGP, our group is particularly interested in the production of hard probes, occurring in the early stages of the collision that probe the whole medium evolution. This PhD project focuses on measurements of the pQCD baseline which constitutes the reference to interpret the measurements in Pb-Pb collisions, and is lacking of experimental constraints. In particular, this project is centred on the study of the contribution of multiple parton interactions on the production of double charm hadrons: open charm, D mesons (formed by a c and light quark), and/or hidden charm, J/ψ mesons (c-char bound state). This becomes possible by measuring their production rates as well as their angular correlation, which is a distinctive characteristic. The revolution of PbPb (at central rapidity)

mots clés

Alice

Lhc

Double Charm



ALICE @ CERN : Hadronic Physics



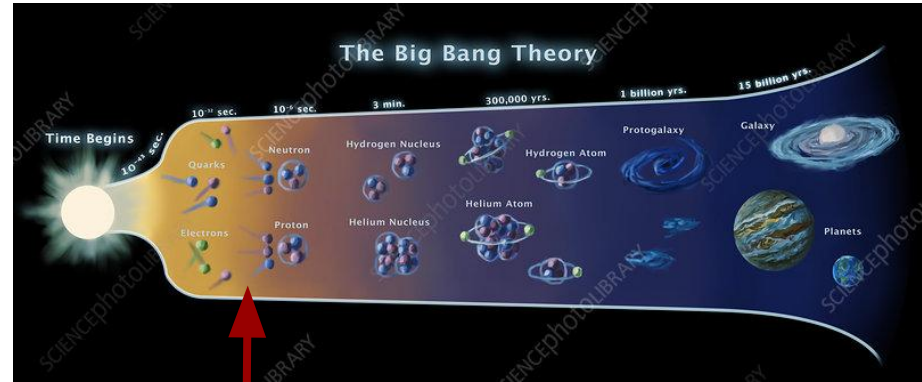
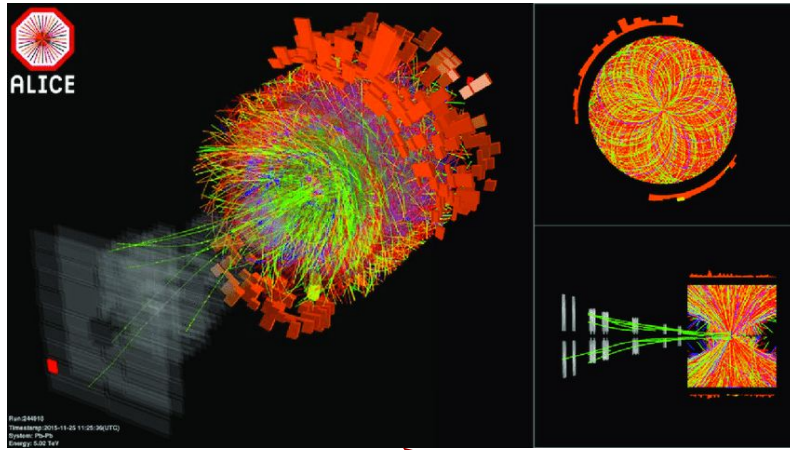
ALICE == A Large Ion Collider Experiment



10 m h * 10m w * 26 m L

What do we do @ ALICE

ALICE is a big machine that study the conditions of the universe after 10^{-6} s of the big bang.



Particles : Pb / p \longrightarrow two beams \longrightarrow accelerating (speed - c) \longrightarrow collision \longrightarrow Analysing the result \longrightarrow Publish your result.

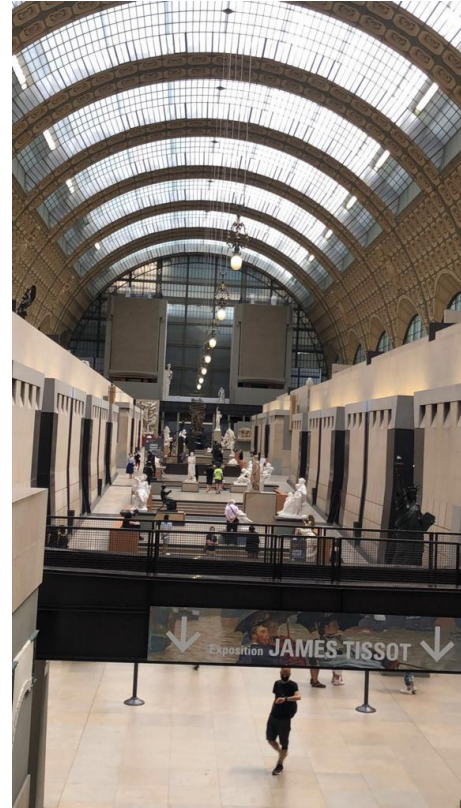
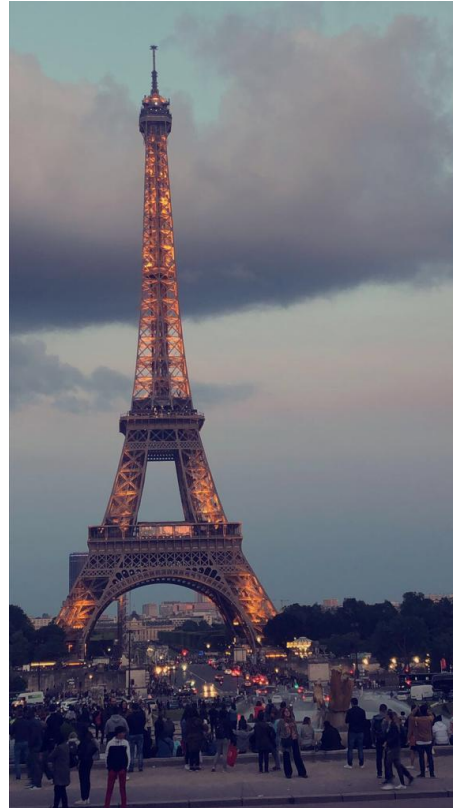
How do we to enjoy paris? (During the weekend)

Go out with friends:



How do we to enjoy paris?

Visit new places



How do we to enjoy paris?

Try new food



How do we to enjoy paris?

Or even make the food



شكرا

Thank you

Merci