Marouane BENHASSI

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🌐 https://marouanebenhassi.github.io/marouane.benhassi/

Place and Date of Birth Marrakesh, 12th September 1997

Bio. I am currently a PhD student at the Univesrsity of Campania Luigi Vanvitelli in Italy, I am working on neutrino physics with the KM3NeT experiment. I am interested in simulation and data analysis using ROOT CERN, Python and C++.

EDUCATION

2022 – Present — **PhD student, University of Campania Luigi Vanvitelli, Italy**
I am working on neutrino physics with the KM3NeT experiment.

2021 – 2022 — **IFJ PAN Particle Physics Summer Student 2022, Kraków, Poland**
The first aim is to introduce basics of the Standard Model of particle physics, methodology of research in this field and statistical data analysis. The second aim is to give the opportunity for students to participate in a real scientific research.
- Title of the research project: New physics searches in ultra-peripheral collisions in ALICE

2020 – 2021 — **ICTP Summer School on Particle Physics, Trieste, Italy, two weeks**
- Description : Acquire a detailed overview of particle physics from the basics of Standard Model phenomenology to the most important areas where significant progress has been achieved recently.

2020 – 2021 — **English Courses, Center for Language and Culture (CLC), Marrakesh, Morocco**

2019 – 2021 — **Master's degree in hight energy physics, Cadi Ayyad University, Morocco**
- **Rank** : 1st in the M2
- Title of Master's Degree Thesis: Neutrinos physics with KM3NeT detector

2015 – 2019 — **Bachelor's degree in modern physics, Cadi Ayyad University, Morocco**
- Title of Bachelor's Degree Thesis: Particle matter interaction and multi-detectors

PROFESSIONAL EXPERIENCES

2021 – 2022 — **Part-time teacher in physics, Massar Al Omam high school, Marrakesh, Morocco**
- Description : Teaching physics for high school and middle school students

2021 – 2022 — **Research project, IFJ PAN, Poland, one month**
- Supervisor: ADAM MATYJA
- Title: New physics searches in ultra-peripheral collisions in ALICE
- Description: Analysing UPCs of Pb-Pb data to look for $\tau\tau$ pair production at $\sqrt{s_{NN}}$ = 5.02 TeV during Run 2. We also worked on searching for Z and H Bosons using Data from the ATLAS Experiment (using Hypatia Program).
- The report is available at: https://www.researchgate.net/profile/Marouane-Benhassi

2020 – 2021 — **Internship at ESMaR laboratory, Rabat, Morocco, two months**
- Supervisor: JIHAD BOUMAAZA
- Description: Construction of the KM3NeT's detector used to detect Cherenkov radiations emitted by charged particles during their propagation in the Mediterranean Sea.

2020 – 2021	## Master thesis, Marrakesh, Morocco, four months

- Title : Neutrino physics with the KM3NeT detector
- Supervisor : MOHAMED CHABAB
- Description : Study of neutrino oscillations and simulation of data from the ORCA detector (One of KM3NeT's detectors) to obtain the oscillation parameters using the monte carlo simulation
- The report is available at : https://www.researchgate.net/profile/Marouane-Benhassi

2018 – 2019
Bachelor thesis, Marrakesh, Morocco, four months

- Title : Particle matter interaction and multi-detectors
- Supervisor : DRISS GOUJDAMI
- Description : Study of the interactions of heavy and light charged particles with the matter, the interaction of radiation-matter, and explanation of the ATLAS and CMS experiments
- The report is available at : https://www.researchgate.net/profile/Marouane-Benhassi

PROJECTS

2021 – 2022
Project: Perform a typical analysis in particle physics

- Description : having a model of signal and background (in the form of generated "Monte Carlo" events – MC samples), figure out a selection criteria that can be applied on data events to suppress the background contribution.

2021 – 2022
Project : Analysis the data of the Z boson decay

- Description : Analyze data from the Z boson decay into two leptons using ROOT CERN software.

2019 – 2020
Project : Analysis the data of the Higgs boson decay

- Description : Analyze the data of the Higgs boson decay into two photons using ROOT CERN software.

SKILLS

Languages
- Arabic : Maternel language
- English : Good
- French : Advanced

Computer skills
- Operating system : GNU/Linux and Microsoft Windows
- Programing Language : **Experienced** : C++ **Familiar** : Python, Fortran, MATLAB, Maple, Mathematica, HTML, CSS
- Framework and Libraries : ROOT CERN, Geant4 (biginner)
- Technologies : Git, LaTeX, Microsoft office pack, Monte Carlo Simulation (biginner)

EXTRA-CURRICULAR ACTIVITIES

2020 – present
Member of HEPA Club: Making physics simple for everyone, Marrakesh

Hobbies
Reading, Playing guitar, Traveling, Cooking, Playing football

REFERENCES

Adam Matyja

- Member of ALIC experiment and the Institute of Nuclear Physics Polish Academy of Sciences (IFJ PAN)
- Researcher
- My supervisor
- adam.tomasz.matyja@cern.ch

Mohamed EL KACIMI

- Member of ATLAS experiment and the High Energy and Astrophysics Laboratory
- Senior university teacher
- My Master teacher
- elkacimi@uca.ac.ma