



## Marouane BENHASSI

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🌐 <https://mbenhassi.github.io/site/>

Place and Date of Birth Marrakesh, 12<sup>th</sup> September 1997

**Bio.** I am currently a second-year PhD student at the University of Campania Luigi Vanvitelli in Italy, I am working on neutrino sources with the KM3NeT-ARCA detector. I am interested in simulation and data analysis using Python and PyROOT, including the calibration of the detector.

### EDUCATION

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*Feb 2022 – Present*

#### **PhD student, University of Campania Luigi Vanvitelli, Italy**

Topic: Study of extended neutrino sources in the Milky Way with KM3NeT-ARCA telescope.

- Experiment : KM3NeT
- Laboratory : Campania AstroPartiCle Infrastructure facility (CAPACITY)
- Supervisor : PASQUALE MIGLIOZZI

*Jun 2020 – Mar 2021*

#### **English Courses, Center for Language and Culture (CLC), Marrakesh, Morocco**

*Sep 2019 – Sep 2021*

#### **Master's degree in high energy physics, Cadi Ayyad University, Morocco**

- **Rank** : 1<sup>st</sup> in the M2
- Title of Master's Degree Thesis: Neutrinos physics with KM3NeT detector
- Supervisor: MOHAMED CHABAB
- The report is available at : <https://www.researchgate.net/profile/Marouane-Benhassi>

*Sep 2015 – Jun 2019*

#### **Bachelor's degree in modern physics, Cadi Ayyad University, Morocco**

- Title of Bachelor's Degree Thesis: Particle matter interaction and multi-detectors
- Supervisor: DRISS GOUJDAI
- The report is available at : <https://www.researchgate.net/profile/Marouane-Benhassi>

### PROFESSIONAL EXPERIENCES

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*Jun 2023 – Present*

#### **Website Creator and Manager at LPHEA, UCA, Morocco**

- Description: Creator and Manager of the LPHEA (Laboratory of High Energy Physics and Astronomy) website at Cadi Ayyad University, responsible for designing, managing, and updating the website to promote the research activities and scientific projects of the laboratory in the field of high energy physics and astronomy.
- Website: <http://lphea.ouca.site>

*Jan 2022 – Present*

#### **Website and Social Media Creator and Manager at HEPAC, FSSM, Morocco**

- Description: Enhancing online presence, fostering engagement, and delivering exceptional results through astute website management and strategic social media initiatives to elevate brand visibility and captivate the target audience.
- Website: <https://hepac.nocmorocco.org>

*Spt 2022 – Feb 2023*

#### **Animator at the French school Victor Hugo, Marrakesh, Morocco**

- Description: As an Animator at the French school Victor Hugo, I provided attentive supervision and organized engaging activities to ensure the well-being and active participation of students.

*Jan 2022 – Jul 2022*

#### **Part-time teacher in physics, programming and TIC, Semailia Faculty of Science, Marrakesh, Morocco**

- Description: Teaching physics, programming and TIC for bachelor's students

- Oct 2021 – Jan 2022 **Part-time teacher in physics, Massar Al Omam high school, Marrakesh, Morocco**
- Description: Teaching physics for high school and middle school students
- Aug 2020 – Sep 2021 **Internship at ESMaR laboratory, Rabat, Morocco**
- 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.

## PROJECTS

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- 2021 – 2022 **Project: 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.
  - Tutor: ADAM MATYJA
- 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 of the data from the Z boson decay**
- Description : Analyze data from the Z boson decay into two leptons using ROOT CERN software.
- 2019 – 2020 **Project: Analysis of the data from the Higgs boson decay**
- Description : Analyze the data of the Higgs boson decay into two photons using ROOT CERN software.

## SKILLS

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- Languages**
- English : Good
  - French : Good
  - Italian : Beginner
  - Arabic : Maternel language
- Computer skills**
- Operating systems: MacOS, GNU/Linux, and Microsoft Windows
  - Programing Language: **Experienced** : C++, Python **Familiar** : Fortran, MATLAB, Maple, Mathematica, PHP
  - Framework and Libraries: ROOT CERN, PyROOT, Geant4 (beginner)
  - Web Development: CSS, HTML, Wordpress, Webflow
  - Technologies : Git,  $\LaTeX$ , Microsoft office pack

## CONFERENCES, SCHOOLS AND WORKSHOPS

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- 2022 – 2023 **Particle Physics Summer School, Krakow, Poland, Invited talk**
- 2022 – 2023 **ISAPP School, Varenna, Italy, Participant**
- 2021 – 2022 **Particle Physics Summer School, Krakow, Poland, Participant**
- 2021 – 2022 **Django girls workshop, CERN, Geneva, Coach**
- 2020 – 2021 **Bad Honnef Physics School, Bad Honnef, Germany, Participant**
- 2020 – 2021 **PyHEP 2021 (virtual) Workshop, Participant**
- 2020 – 2021 **ICTP Summer School, Trieste, Italy, Participant**

KM3NeT collaboration, MAROUANE BENHASSI "KM3NeT real-time analysis framework", February 2024, DOI: 10.22323/1.441.0273

KM3NeT collaboration, MAROUANE BENHASSI "Prospects for combined analyses of hadronic emission from  $\gamma$ -ray sources in the Milky Way with CTA and KM3NeT", Eur.Phys.J.C, September 2023, DOI: <https://arxiv.org/pdf/2309.03007.pdf>

KM3NeT collaboration, MAROUANE BENHASSI "Embedded Software of the KM3NeT Central Logic Board", Comput.Phys.Commun., August 2023, DOI: <https://doi.org/10.1016/j.cpc.2023.109036>

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#### EXTRA-CURRICULAR ACTIVITIES

2020 – present    Member of HEPA Club: Making physics simple for everyone, Marrakesh, Morocco  
• Website: <http://hepac.uca.ma>

Hobbies    Reading, Playing guitar, Playing football

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#### REFERENCES

##### Pasquale Migliozi

- Director of the CAPACITY laboratory and member of KM3NeT and ANTARES experiments
- My PhD tutor
- [pasqualemigliozi69@gmail.com](mailto:pasqualemigliozi69@gmail.com)

##### Adam Matyja

- Member of ATLAS experiment and the High Energy
- Member of ALIC experiment and the Institute of Nuclear Physics Polish Academy of Sciences (IFJ PAN)
- Researcher
- My supervisor at PPSS
- [adam.tomasz.matyja@cern.ch](mailto: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](mailto:elkacimi@uca.ac.ma)