GEORGIOS CHRISTOU

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EDUCATION

MSc Particle and Nuclear Physics, University of Edinburgh, Edinburgh, Scotland — Sept 2023 - Present

BSc Physics, University of Cyprus, Nicosia, Cyprus — Sept 2019 - Jun 2023
Graduated with Excellence, 1^{st} in class, GPA: 8.66/10

High School Diploma (Apolytirio), Lyceum Makariou III, Larnaca, Cyprus — Sept 2015 - Jun 2018
Graduated with Excellence, GPA: 19.22/20

RESEARCH EXPERIENCE

CERN Summer Student Programme 2023 — Jun 2023 - Aug 2023
Internship, Project Supervisors: Prof. Angelo Carbone, Dr. Federico Betti — *LHCb Collaboration*

- Study of CP asymmetries in charm decays at the LHCb experiment.
- Development of new kinematic weighting algorithm for the measurement of CP asymmetries.
- Implementation of RapidSim and Particle Gun to simulate data.
  The project report is on CDS and on GitHub.

Baryon spectrum directly at the physical point using twisted mass ensembles — Sept 2022 - May 2023
BSc Thesis, Project Supervisor: Prof. Constantia Alexandrou — *University of Cyprus*

- The thesis was a continuation of the previous project and the purpose was to complete the calculations for the baryon mass spectrum.
- The first ever calculation of the low-lying baryon spectrum at the continuum limit using exclusively physical point twisted mass fermion ensembles.
- Became familiar with the environment of exascale computers.
- Implementation of model averaging techniques.
- Using three different ensembles with different lattice spacings and various computational techniques it was possible to calculate the baryon mass spectrum at the continuum limit and compare the results to the experimental values.
- Prediction of previously unmeasured low-lying masses of doubly- and triply-charmed baryons.

Low-lying baryon baryon masses from Lattice QCD — May 2022 - Jun 2022
Undergdraduate Internship, Project Supervisor: Prof. Constantia Alexandrou — *University of Cyprus*

- Calculation of various baryon masses using correlator data generated from lattice QCD simulations.
- Implementation of methods for evaluating the low-lying baryon spectrum at finite lattice spacing.

Wave function of the universe for the Starobinsky inflationary model — Jun 2021 - Aug 2021
Undergdraduate Internship, Project Supervisor: Prof. Nicolaos Toumbas — *University of Cyprus*

- The main purpose of this project was to see whether initial conditions favouring inflation are probable.
- We approximated the Starobinsky potential as a step function and we used the WKB approximation in the semiclassical regime in order to find the wave function for various values of the inflaton field.
- Using appropriate boundary conditions we constructed the quantum probability density distribution for this inflationary model.

PUBLICATIONS

- A list of my publications can be found on my INSPIRE profile.

SKILLS

- **Programming**: Fortran, Mathematica, C++, Python, ROOT, Bash/Shell, Julia (Beginner)
- **Languages**: Greek (Native), English (IELTS Score: 8, Level: C1), French (Beginner)
- **Technical**: Git, GitHub, LaTeX, Linux, Unix

AWARDS & ACHIEVEMENTS

Valedictorian in the Department of Physics, University of Cyprus — Jun 2023
Awarded to the student with the highest GPA of the department

Grade 5 Music Theory, The Associated Board of the Royal Schools of Music — May 2019
Grade: Distinction

Electric Guitar Degree, Musical Horizons Conservatory — Nov 2017
Grade: Excellent

OTHER

Cypriot National Guard: Cyprus, 14 Months — Jul 2018 - Sept 2019
Rank: Private

INTERESTS

My hobbies include photography and especially wide-field and deep-sky astrophotography, as well as creating time-lapse videos. Moreover I enjoy playing guitar, listening to music and reading books. Another passion of mine is creating programs to solve numerical problems in physics.