Nicolas Angelides

n.angelides.17@ucl.ac.uk
Date of Birth: 3rd of September 1996
Nationality: Cypriot (EU)

EDUCATION & RECENT WORKSHOP PARTICIPATION

PhD in Cosmoparticle Physics, University College London (UCL) 2017-2021

- New initiative to bring different perspectives of dark matter (DM) together by creating this position in between the Astrophysics, Direct Detection and Collider Physics groups.
- First Supervisors: Andrew Pontzen and Chamkaur Ghag, Second Supervisor: Jon Butterworth

Theoretical Physics (MPhys), University of Edinburgh (UoE) Final Average: **73%** 2013-2017
Awarded Master of Physics with Honours Class of Award: **First Class**

- MPhys project in directional direct DM detection. I have developed simulation code to study dark matter velocity distributions and the WIMP-nucleon angular dependent scattering cross section for a novel detector set-up.
- Senior Honours courses werechosen to provide a deep theoretical understanding of particle physics. Courses include: advanced QFT, Gauge Theories of the SM and QCD physics.

DMUK 2017 July 2017

- Participated in the dialogue concerning the fundamental role of the UK in DM experiments.
- **Presented my work** on the future of direct detection experiments and the use of direct detection as a solution to the issue of the neutrino floor.

International School of Subnuclear Physics June 2017

- Was awarded **a full scholarship** and attended lectures by experts in the fields of Modern Particle Physics. Co-organised by Antonino Zichichi and Gerardus t'Hooft who elaborated on the future of science and the role of scientists in global issues.
- **Presented my work** on directional DM detection as a New Talent and **received the Patrick M. S. Blacket diploma** of excellence.

Invisibles16 workshop Sep 2016

- Attending the Invisibles workshop exposed me to the very forefront of current research in neutrino, flavour and CP, dark matter and Higgs physics. These were delivered from the point of view of theory, experiment and phenomenology.
- **Presented a poster** of my research on the TITUS near detector.

JENNIFER Summer School on Particle Pysics and Detectors July 2016

- I was **awarded a full scholarship** to attend this international school in Germany organised by EU and Japanese research groups.
- **Presented a poster** and received the **1st place award** for my work on the LZ experiment.

Higgs Centre School of Theoretical Physics May 2016

- Participated in lecture courses and tutorials aimed at PhD students and postdocs delivered by Thomas Becher (Bern) on *"Soft-Collinear Effective Field Theory and collider physics"* and David Cerdeño (Durham) on *"Dark Matter 101: from production to detection"*.

Hands-on Statistics Workshop organised by LZ-UK and IPPP Durham Jan 2016

- A workshop on the application of frequentist and Bayesian statistics on the interpretation of data from rare event searches. The paradigms was presented by Eilam Gross (Weizmann Institute) and Roberto Trotta (Imperial College London) respectively.
- I **received an award** from a joint IPPP-Edinburgh grant to fund my attendance.

PROJECT EXPERIENCE

UoE Hyper-Kamiokande - Experimental Neutrino Physics Research Group 2016-2017

- Was awarded funding by the School of Physics and Astronomy Career Development Internship to carry out an eight-week summer project. This project involved simulations to optimise the photo-coverage of a proposed water-cherenkov near detector (TITUS).
- I present my progress and results during national collaboration calls with participants from many prestigious universities in the UK.

UoE Dark Matter Direct Detection Research Goup (EdiDM) 2015-2017

- Joined the efforts made by one of the leading international collaborations trying to detect dark matter, which remains as one of the foremost scientific questions of our time.
- My work so far concerns fiducial volume cuts and background studies of the LZ experiment as well as implementation of effective field theory to the analysis of LUX results.
- As an active member of this group I have the opportunity to learn from and interact with a team of up-to 200 scientists allowing me to continuously improve at working in groups.

RELEVANT SKILLS

Programming

- Languages: fluent in Python, Java, C++, Shell, AWK, LaTeX
- Statistical analysis: ROOT, MATLAB
- Simulation tools: GEANT4

Presentation Skills

- Participation in collaboration meetings presenting recent progress. Such experience improved my communication skills, essential to the efficient operation of any research group.
- Public summary presentations, delivered to a group of my peers as part of the degree structure, have also strengthened my abilities to concisely communicate details of my research (in groups and individually).

Language

- IGCSE Edexcel English as a 2^{nd} language-A* (Highest Mark in Cyprus) and Greek as a mother tongue.

ADDITIONAL INTERESTS

Student Community involvement

- Elected Chair of the Student Staff Liaison Committee in Undergraduate Degree. Represented the student body in the dialogues carried out aiming to improve teaching and student-staff interaction.
- Leader in peer assisted learning scheme of the UoE. This volunteering activity allows more experienced students to assist their peers in structured working groups. It facilitates the enrichment of communication skills providing some initial experience in the field of teaching.

Art

- Attendance of workshops under artist Spyroulla Skordi on sculpture and sketching. Study on the expressions of the human form through static materials such as clay and charcoal. (2009-Present).

Student societies involvement

- Philosophy Society; attendance of lectures and discussion groups.
- Savoy Opera group; performing in musical theatre and scenography; prop design and construction.

REFERENCES

◄ Prof. Alex Murphy, FRAS, FInstP. MPhys Project Supervisor.
Professor of Nuclear and Particle Astrophysics, UoE Dark Matter group Principal Investigator.
School of Physics and Astronomy, University of Edinburgh.
King's Buildings, JCMB 8208, Peter Guthrie Tait Road, Edinburgh EH9 3FD, United Kingdom
a.s.murphy@ed.ac.uk