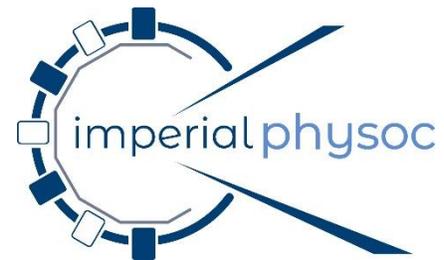




LUCIDUS

FEBRUARY 2021 PHYSOC NEWSLETTER



15 Minute Physics

Modelling QCD with Quantum Computers

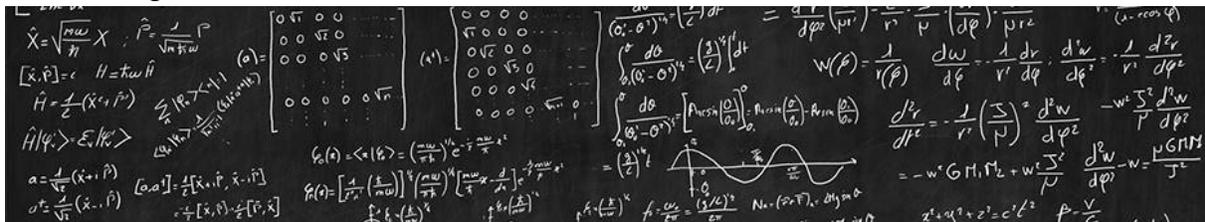
by Simon Williams

12:30 on Tuesday, February 9th

Join us [here](#)

We have an excellent 15 Minute Physics talk coming up next week! Come along to learn more about using quantum computers to model QCD events and to ask any question you may have about doing a PhD in the field.

Abstract: “With the continuous improvement of quantum devices there is an effort to develop dedicated algorithms to exploit the potential that quantum computers could provide. One such area where quantum computers could provide an advantage is in event simulation for high-energy, multi-particle quantum chromodynamics (QCD) collisions. The interpretation of measurements of high-energy particle collisions relies heavily on the performance of full event generators. Such simulations are both computationally costly and time consuming. In this talk, I will give a brief outline of how quantum computers can be used to model high-energy QCD events at colliders such as the Large Hadron Collider, at CERN.”



Undergraduate Colloquia Programme

Simulating the Point Spread Function (PSF) of an optical system using Huygens principle

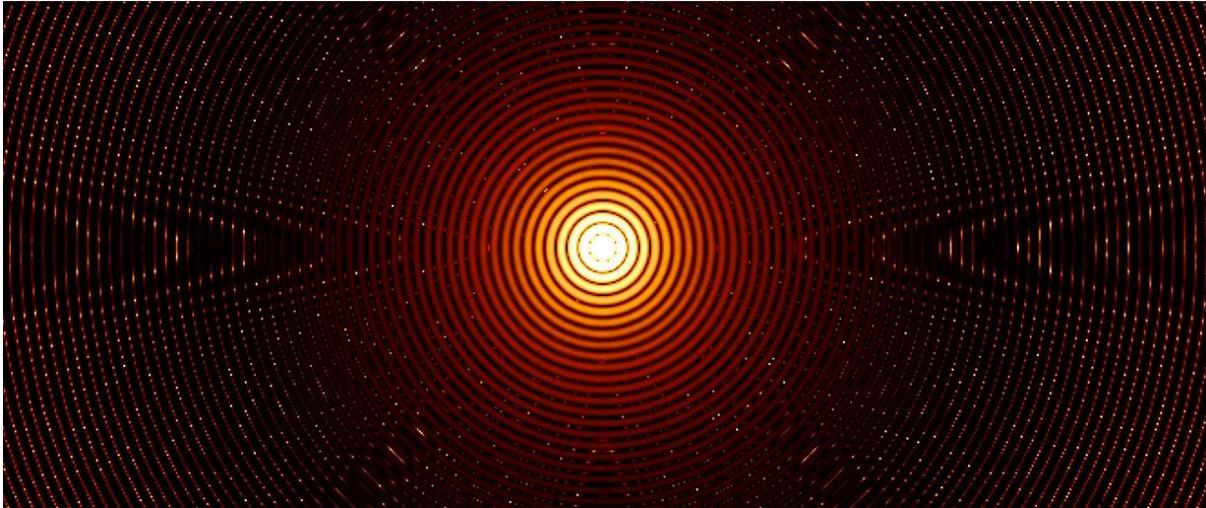
By Lorenzo Versini

12:00 on February 10th (30 minutes)

Join us [here](#)

Here is a nice chance to find out more about UROPs in the Physics Department and to learn about the kind of research that you can do right now as an undergraduate. This is an opportunity for those interested in the mathematical intricacies of waves optics, and for those interested how to land an UROP in the next summer!

Abstract: “In this talk I will discuss how Huygens principle can be used to simulate the Point Spread Function (PSF) of a set of lenses. I will start with introducing Huygens principle to explain diffraction which limits the resolution of an optical system. I will introduce the idea of “wavefront” and how it’s free-space propagation can be computed numerically using the convolution of an appropriate kernel. I will show the advantages of a more general kernel compared to the usual Fresnel kernel. I will then illustrate the process of propagating the wavefront out of a point source through an optical system to find the PSF. Finally, I will briefly mention how numerical cleaning algorithms can be used to clean images to regain part of the lost resolution.”



Diversifying Physics

How to end biases in STEM and academia

With Dr. Jessica Wade, Dr. Emma Chapman and Dr. Yolanda Ohene

18:30 on Monday, February 15th

Join us [here](#)

We will host a panel discussion with three amazing physicists who've spent years advocating for the diversification of science and academia. Dr. Jessica Wade, the moderator of the discussion, is a researcher at Blackett Laboratory working on oLED and being actively engaged in promoting gender equality in science. She is involved in projects such as Wikipedia-edit-a-thons, design to fight underrepresentation of female scientists on internet. We will be welcoming Dr. Emma Chapman, astrophysicist at Imperial College, and winner of the 2018 Royal Society Athena Prize, as well as Dr. Yolanda Ohene, researcher at the University of Manchester and winner of the 2019 Jocelyn Bell Burnell medal and prize. With these fantastic guests, we will discuss the longstanding problem of racial and gender bias in science and ways in which we can tackle it.

Messages from Our Sponsors



Check out our current open positions on our [career site](#). We have positions for penultimate year and final year students. Freshers or second years of a four year course, we will be publishing our Insights day soon so be sure to keep an eye out for this.

We hope you are all staying safe during this time and have an enjoyable remainder of the year!



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