ScotDIST annual research conference 2019

Report of Contributions

https://indico.global/e/2189

Contribution ID: **2** Type: **not specified**

Industry talk : Nick Radcliffe, Stochastic Solutions

Friday 15 November 2019 12:00 (30 minutes)

Contribution ID: **4** Type: **not specified**

Industry talk : Karl Nordstrom, Spire Global

Friday 15 November 2019 14:30 (30 minutes)

The Science of Bad Data

Contribution ID: **5** Type: **not specified**

Topical discussion / Ask ScotDIST

Friday 15 November 2019 16:00 (1 hour)

Contribution ID: **21** Type: **not specified**

Earth Object Detection on-board CubeSats Using Deep Learning

Friday 15 November 2019 11:00 (10 minutes)

Presenter: ARMSTRONG, John (University of Glasgow)

Session Classification: Talks

Contribution ID: **22** Type: **not specified**

Doubly charmed baryon searches at LHCb

Friday 15 November 2019 11:10 (10 minutes)

The main focus of my research work - search for the doubly charmed baryon Xicc+ in two different decay channels using data recorded by the LHCb experiment, will be discussed.

Presenters: BOBULSKA, Dana (University of Glasgow); SEMAN BOBULSKA, Dana (University of Glasgow (GB))

Session Classification: Talks

Contribution ID: **23** Type: **not specified**

The highs and lows of an industry placement

Friday 15 November 2019 11:30 (10 minutes)

I will discuss my first industry placement which took place over the summer at the Heineken UK HQ in Edinburgh. A brief insight will be given into working in industry. (It's not all about Beer!)

Presenter: LOVE, Teri (University of St Andrews)

Session Classification: Talks

Contribution ID: **24** Type: **not specified**

Constraining Astronomy with Nuclear Physics and vice versa

Friday 15 November 2019 11:20 (10 minutes)

Nuclear physics, through computational models, provides the opportunity to constrain astronomy. Little is known about the oldest stars, but through observations of there successors and nucleosynthetic models, we can begin to predict the conditions they produced and their properties.

Presenter: LLOYD, Samuel (University of Edinburgh)

Session Classification: Talks

Contribution ID: **25** Type: **not specified**

Gamma-Ray Burst Jet Structure Modelling

Friday 15 November 2019 11:40 (10 minutes)

The angular distribution of energy from gamma-ray bursts is unknown, but it is believed their could be a common structure among all these astrophysical events. I combine gravitational wave and electromagnetic data to perform model comparison between different existing jet structure models and infer model parameters. I also perform a non-parametric approach to determine the structure using Gaussian processes.

Presenter: HAYES, Fergus John

Session Classification: Talks

Contribution ID: **26** Type: **not specified**

GW propagation through the clumpy universe

Friday 15 November 2019 11:50 (10 minutes)

Presenter: KALOMENOPOULOS, Marios (University of Edinburgh)

Session Classification: Talks

Contribution ID: **27** Type: **not specified**

Craft prospect placement

Friday 15 November 2019 13:30 (10 minutes)

I will discuss my time with Craft Prospect giving details on some of the work completed and my personal experience from the placement.

Presenter: DI PIETRO, Gennaro (University of Edinburgh)

Session Classification: Talks

Contribution ID: **28** Type: **not specified**

Using MCMC techniques in a scattering amplitude analysis

Friday 15 November 2019 13:40 (10 minutes)

In addition to more classic parameter estimation techniques, MCMC techniques can be implemented to compliment these methods as a further analysis tool. These tools become especially useful when the dimensionality of parameter spaces become high, as is the case with the three pion production channel that will be a focus of this analysis.

Presenter: WISHART, Robert (University of Glasgow)

Session Classification: Talks

Contribution ID: **29** Type: **not specified**

(Machine) learning the structure of BSM matrix element corrections

Friday 15 November 2019 13:50 (10 minutes)

Presenter: GANGAN, Abhijeet (University of Glasgow)

Session Classification: Talks

Contribution ID: **30** Type: **not specified**

Placement: Spotting Bad Kegs on a Production Line

Friday 15 November 2019 14:00 (10 minutes)

Presenter: THORNTON, Adam (University of Edinburgh)

Session Classification: Talks

Contribution ID: **31** Type: **not specified**

Hyper-fast gravitational wave parameter estimation using machine learning

Friday 15 November 2019 14:10 (10 minutes)

Gravitational wave detection is now commonplace and as the sensitivity of the global network of GW detectors improves, we will observe O(100)s of transient GW events per year. The current methods used to estimate their source parameters employ optimally sensitive but computationally costly Bayesian inference approaches where typical analyses have taken between 6 hours and 5 days. Here we show that a conditional variational autoencoder pre-trained on binary black hole signals can return Bayesian posterior probability estimates 6 orders of magnitude faster than existing techniques.

Presenter: GABBARD, Hunter (University of Glasgow)

Session Classification: Talks

Contribution ID: **32** Type: **not specified**

Improving B meson form factor calculations in lattice QCD

Friday 15 November 2019 14:20 (10 minutes)

Presenter: PERTINEZ, Esther (University of Glasgow)

Session Classification: Talks

Contribution ID: **33** Type: **not specified**

LIGO fellowship experience

Friday 15 November 2019 15:00 (10 minutes)

Presenter: DATRIER, Laurence (University of Glasgow)

Session Classification: Talks

Contribution ID: **34** Type: **not specified**

Information production in homogeneous isotropic turbulence

Friday 15 November 2019 15:10 (10 minutes)

One of the most striking features of turbulent fluid flows is their seemingly random and unpredictable nature. However, since such fluids are described by the Navier-Stokes equations, which are entirely deterministic in nature, their motion cannot be truly random. In reality, turbulent flows exhibit what is commonly referred to as deterministic chaos. The time evolution of such systems is characterized by an extreme sensitivity to initial conditions which has profound consequences for their predictability.

Presenter: CLARK, Daniel (University of Edinburgh)

Session Classification: Talks

Contribution ID: **35** Type: **not specified**

Combining collider analysis data for global BSM bounds-setting

Friday 15 November 2019 15:20 (10 minutes)

Presenters: BROWN, Stephen (University of Glasgow); BROWN, Stephen (University of Glasgow); BROWN, Stephen (University of Glasgow)

Session Classification: Talks