

# **Wednesday 10 April**

09:00

Parallel Sessions: Wednesday I Session A Session | Location: The Spine, Space One | Convener: Sara Alderweireldt 09:00-09:15 Search for long lived ALPs that decay into diphoton in Run 3 (12'+3') Speaker Rebecca Katie Irwin 09:15-09:30 Searches for the Inert Doublet Model (12'+3') Speaker **Edward Curtis** Location The Spine, Space One 09:30-09:45 Search for dark showers in the b-parking dataset (12'+3) **Speakers** Kai Hong Law, Kai Hong Law Location The Spine, Space One 09:45-10:00 Re-thinking the CMS Level 1 Trigger with Machine Learning (12'+3') Speaker Maciej Mikolaj Glowacki Location The Spine, Space One 10:00-10:15 The ATLAS Run III L1 calorimeter trigger (12'+3') Speaker Panagiotis Bellos Location The Spine, Space One 10:15-10:30 Measurement of Higgs boson properties via the H-> ττ decay channel (12'+3') Speaker Roxani Lazaridou Location The Spine, Space One

10:30 09:00

**Parallel Sessions: Wednesday I Session B** 

Session | Location: The Spine, Space Two | Convener: Tracey Berry

09:00-09:15

A search for lepton flavour violating  $\tau \rightarrow 3\mu$  decays with the ATLAS experiment (12'+3')

Speaker

Conor McPartland

09:15-09:30

Search for light long-lived neutral particles from Higgs boson decays via vector-boson-fusion production from proton-proton collisions at sqrt(s)=13 TeV with the ATLAS detector (12'+3')

#### Speaker

Richards González

#### 09:30-09:45

Searching for direct stau production in the lepton-hadron final state at ATLAS using machine learning (12'+3')

#### **Speaker**

Sebastian Rutherford Colmenares

09:45-10:00 Searching for Supersymmetry with the ATLAS Detector (12'+3')

#### Speaker

Alessandro Ruggiero

10:00-10:15 A search for tri-Higgs production at the ATLAS detector (12'+3')

#### **Speaker**

Maggie Chen

10:15-10:30 ML and BSM reinterpretation - challenges and opportunities (12'+3')

#### Speaker

10:30

Tomasz Procter

99:00 Parallel Sessions: Wednesday I Session C

Session | Location: The Spine, Space Four | Convener: Kostas Mavrokoridis

09:00-09:15 Beyond the standard model particle searches in MicroBooNE (12'+3')

### Speaker

Luciano Arellano

09:15-09:30 Sensitivity to HNLs with the ANUBIS detector (12'+3')

### Speaker

Anna Jane Mullin

### 09:30-09:45

Developing the Reconstruction of a Magnetised Gaseous Argon TPC for the DUNE Near Detector (12'+3')

#### **Speaker**

Francisco Martinez Lopez

#### 09:45-10:00

A Data-Driven Extrapolation Technique for the DUNE-PRISM Oscillation Analysis (12'+3')

### Speaker

Alexander J Wilkinson

10:00-10:15 Measuring Reactor Antineutrino Oscillation at SNO+ (12'+3')

### Speaker

James Page

09:00

### **Parallel Sessions: Wednesday I Session D**

Session | Location: The Spine, Space Five | Convener: Amy Cottle

09:00-09:15

Stopping Effects and Sensitivity of Sub-GeV Dark Matter in QUEST-DMC (12'+3')

Speaker

Neda Darvishi

09:15-09:30

Cryogenic qualification of SiPM array detectors for the DarkSide-20k experiment (12'+3')

Speaker

Alice Hamer

09:30-09:45

Boosted Dark Matter Sensitivity in the DarkSide-20k Detector (12'+3')

Speaker

Zoe Balmforth

09:45-10:00

The APEX Experiment: a dark matter search at Jefferson Lab Hall A (12'+3')

Speaker

Oliver Jevons

10:00-10:15 Status of the LUX-ZEPLIN (LZ) Dark Matter Experiment (12'+3')

Speaker

Ewan Fraser

10:15-10:30

LZ Outer Detector: Calibration, Monitoring and Performance in Contribution to First Science Result (12'+3')

Speakers

Sam Woodford, Sam Woodford

10:30

09:00

# Parallel Sessions: Wednesday I Session E

Session | Location: The Spine, Space Seven | Convener: Sam Jenkins

09:00-09:15 BUTTON Simulations for the Development of WbLS (12'+3')

Speaker

Adam Tarrant

09:15-09:30

ARIADNE+: Large Scale Demonstration of Fast Optical Readout for Dual Phase LArTPCs at the CERN Neutrino Platform (12'+3')

Speaker

Adam Lowe

09:30-09:45 Q-Pix: pixel-based charge readout for kton scale LArTPC (12'+3')

Speaker

Shion Kubota

09:45-10:00

The University of Sheffield LArTPC Test Stand for Development of Next Generation Charge Readout Technologies (12'+3')

#### Speaker

Harry Scott

#### 10:00-10:15

Understanding the Off-Axis Flux of Neutrinos from Neutral Kaons (12'+3')

#### Speaker

Holly Parkinson

10:30 09:00

### Parallel Sessions: Wednesday I Session F

Session | Location: The Spine, Space Eight | Convener: Paolo Beltrame

09:00-09:15 Status of the Fermilab Muon g-2 Experiment (12'+3')

#### Speaker

Ce Zhang

#### 09:15-09:30

Measurement of the anomalous spin precession frequency ω\_a in the Muon g-2 experiment at Fermilab (12'+3')

Lorenzo Cotrozzi

#### 09:30-09:45

Search for an explanation to the muon anomalous magnetic moment through the non-resonant production of two additional Higgs bosons (12'+3')

### **Speaker**

Klitos Savva

09:45-10:00 Status of the MUonE experiment (12'+3')

### Speaker

Riccardo Pilato

### 10:00-10:15

Measurement of the muon electric dipole moment at the Fermilab Muon g-2 experiment (12'+3')

#### **Speakers**

Lucy Bailey, Miss Lucy Bailey Bailey

#### 10:15-10:30

Nuanced Beta Spectral Shapes and Their Role in Exploring Physics Beyond the Standard Model (12'+3')

#### Speaker

Marlom Ramalho

10:30

09:00

# Parallel Sessions: Wednesday I Session G

**Session** | **Location:** The Spine, Space Six | **Convener:** Marielle Chartier

09:00-09:15 Silicon detector upgrades in ALICE: ITS3 and ALICE 3 (12'+3')

#### Speaker

lian Liu

09:15-09:30

Low transverse momentum jet measurements in heavy-ion collisions with ALICE (12'+3')

Speaker

Jaime Norman

09:30-09:45

Exploring Neutron stars EoS with coherent  $\pi^0\pi^0$  photoproduction at A2@MAMI (12'+3')

Speaker

Mihai Mocanu

09:45-10:00

Probing the strange meson spectrum through the analysis of photoproduction reaction yp->K+K-yyp at the GlueX experiment (12'+3')

Speaker

**Darius Darulis** 

10:00-10:15 Studying gluon GPDs at the Electron Ion Collider via DVMP (12'+3')

Speaker

Stuart Fegan

10:15-10:30 Measurement of the Electric Form Factor of the Neutron (12'+3')

Speaker

Gary Penman

10:30

09:00

# Parallel Sessions: Wednesday I Session H

Session | Location: The Spine, Space Nine | Convener: David Jenkins

09:00-09:15

Dense room temperature spin polarized nuclear targets from SABRE chemical hyperpolarization methods - R&D status (12'+3')

**Speakers** 

Benjamin Collins, Benjamin Collins

09:15-09:30

Nuclear Density Functional Theory Calculations of Nuclear Schiff Moment of Ac-227 (12'+3')

Speaker

Herlik Wibowo

09:30-09:45

Shell-model study of 58Ni using quantum computing algorithm (12'+3')

Speaker

Bharti Bhoy

09:45-10:00

Binding Blocks UK: A National, Inclusive Programme for Nuclear Physics Education (12'+3')

Speaker

Joel Richardson

10:00-10:15 (Many!) Proton Knockout With CLAS@JLAB (12'+3')

Rhidian Williams

10:15-10:30

Cross Sections of Proton-Induced Reactions on natZn and natNi: Exploring the 67Cu/64Cu Theranostic Pair Production (12'+3')

Speaker

Mamad Eslami

10:30 11:00

# Parallel Sessions: Wednesday II Session A

Session | Location: The Spine, Space One | Convener: Nikolaos Rompotis

11:15-11:30

Search for Decays of the Higgs Boson into a Z Boson and a Light Hadronically Decaying Resonance (12'+3')

Speaker

Chonghao Wu

11:30-11:45

Transformer Neural Networks for Large Radius Jet Classification and Regression for Boosted Higgs Bosons at the ATLAS Detector (12'+3')

Speaker

Andrius Vaitkus

11:45-12:00

Constraining Anomalous Quartic Gauge Couplings in Production of Three Massive Vector Bosons with the ATLAS detector (12'+3')

Speaker

Patrick Dougan

12:00-12:15 The first measurement of the ttZ->nunu cross section. (12'+3')

Speaker

Michael Antony Postill

12:15-12:30

Top quark mass measurement in the boosted lepton+jets channel in pp collisions at  $\sqrt{s}=13$  TeV using the ATLAS detector at the LHC (12'+3')

Speaker

Elliot Watton

12:30 11:00

### Parallel Sessions: Wednesday II Session B

Session | Location: The Spine, Space Two | Convener: Carl Gwilliam

11:00-11:15

A Search for Dark Matter in the Light of Dark-Higgs Strahlung (12'+3')

**Speaker** 

Tim Lukas Brueckler

11:15-11:30

A search for high-mass resonances decaying to  $\tau \nu$  in pp-collisions at center-of-mass energy = 13 TeV with the Run-2 data of the ATLAS detector (12'+3')

Speaker

Christos Vergis

11:30-11:45

Searching for missing mass in proton-tagged dilepton events with the AFP and ATLAS detectors (12'+3')

Speaker

Josh Lomas

11:45-12:00

The Search for Axion-Like Particles with the FASER Experiment at the LHC (12'+3')

Speaker

Charlotte Cavanagh

12:00-12:15

Baler: Machine-Learning-Based Compression of Scientific Data in Real Time (12'+3')

Speaker

James Smith

12:15-12:30

Upgrading the magnetic spectrometer for electron bunch emittance and energy measurements at AWAKE. (12'+3')

Speaker

Fern Pannell

12:30

11:00

# Parallel Sessions: Wednesday II Session C

Session | Location: The Spine, Space Four | Convener: Neil McCauley

11:00-11:15

Sensitivity Studies for a Gaseous Argon Near Detector for DUNE (12'+3')

Speaker

Naseem Khan

11:15-11:30

Analysing the fast oscillations of atmospheric neutrinos at Super-Kamiokande (12'+3')

Speaker

George Burton

11:30-11:45

Sterile Neutrino Oscillation Searches using the VALOR Fitting Framework at SBN (12'+3')

Speaker

Beth Slater

11:45-12:00

Improving Neutrino Energy Reconstruction with Machine Learning (12'+3')

Speaker

Margot MacMahon

12:00-12:15

Joint analysis between Super-Kamiokande atmospheric and T2K accelerator neutrinos (12'+3')

Zhenxiong Xie

12:15-12:30

Supernova triggering at DUNE from machine-learning based clustering (12'+3')

Speaker

Dennis Lindebaum

12:30 11:00

# **Parallel Sessions: Wednesday II Session D**

Session | Location: The Spine, Space Five | Convener: Sergey Burdin

11:00-11:15 Characterising Electric Fields in LZ (12'+3')

Speaker

Sparshita Dey

11:15-11:30 Multiple Scatter Neutron Background Measurements in LZ (12'+3')

Speaker

Jo Orpwood

11:30-11:45

Studies of radioactive background from environment for a potential LXe dark matter experiment at Boulby (12'+3')

Speaker

Jemima Tranter

11:45-12:00

Searching for Low Mass Dark Matter in Silicon using the Silicon Photomultipliers in Darkside-20k. (12'+3')

Speaker

Seraphim Koulosousas

12:00-12:15 Benchmarking the DarkSide-20k UAr Cryogenic System (12'+3')

**Speakers** 

Oliver Macfadyen, Olly Macfadyen

12:15-12:30 Muon & Antimuon Separation Using Machine Learning at MicroBooNE

**Speaker** 

Charlie Batchelor

12:30 11:00

### Parallel Sessions: Wednesday II Session E

Session | Location: The Spine, Space Seven | Convener: Prof. David Waters

11:00-11:15

Measuring muon antineutrino charged-current interactions without mesons in the final state, in the NOvA Near Detector. (12'+3')

Speaker

Kevin Vockerodt

11:15-11:30 TPC Calibration in the Short Baseline Near Detector (SBND) (12'+3')

**Speakers** 

Robert Darby, Robert Darby

11:30-11:45

Modelling Cosmic Ray Muon Spallation for a Hyper-Kamiokande DSNB Analysis (12'+3')

Speaker

Jack Fannon

11:45-12:00

Constraints on the Cosmic Neutrino Background from NGC1068 (12'+3)

Speaker

Jack Franklin

12:00-12:15 The SNO+ Neutrinoless Double Beta Decay Programme (12'+3')

Speaker

Dr Benjamin Tam

12:15-12:30 Cold Atoms, Cool Physics: Progress in the AION Project (12'+3')

Speaker

Elizabeth Pasatembou

12:30 11:00

# **Parallel Sessions: Wednesday II Session F**

Session | Location: The Spine, Space Eight | Convener: Paras Naik

11:00-11:15

Characterization of irradiated Silicon Photomultipliers for LHCb Upgrade II (12'+3')

Speaker

Constantinos Vrahas

11:15-11:30

Amplitude Analysis of B 0  $\rightarrow$  D 0 D  $^-$  0 K +  $\pi$  – decays with the LHCb experiment (12'+3')

Speaker

Jake Amey

11:30-11:45

Search for rare Bd -> phi phi decays in the full Run 1 + Run 2 dataset from the LHCb experiment (12'+3')

**Speaker** 

Mary Richardson-Slipper

11:45-12:00

Angular analysis of rare Bs decays involving electrons at the LHCb Experiment (12'+3')

Speaker

Lorenzo Paolucci

12:00-12:15

Test of lepton flavour universality using B+ -> K+I+I- processes at high dilepton invariant mass (12'+3')

Speaker

James Herd

12:15-12:30

Search for Right-Handed Weak Decays with the LHCb Detector (12'+3')

Speaker

James Brown

12:30 11:00

# **Parallel Sessions: Wednesday II Session G**

Session | Location: The Spine, Space Six | Convener: Liam Gaffney

11:00-11:15

Comparing Post Processing Nucleosynthesis (PPN) codes: An investigation into the impact that different reaction rate libraries and PPN codes can have on a variety of different astrophysical environments (12'+3')

**Speaker** 

Alexander Hall-Smith

11:15-11:30

Constraining the NiCu cycle in X-ray bursts: Spectroscopy of 60Zn (12'+3')

**Speaker** 

Mr Connor Thomas O'Shea

11:30-11:45

A new Measurement of 16O(p,  $\alpha$ )13N reaction rate using MUSIC detector at the energies relevant to SNIa (12'+3')

**Speaker** 

May Alruwaili

11:45-12:00

Neutron irradiations at the University of Birmingham High Flux Accelerator Driven Neutron Facility (HF-ADNeF) (12'+3')

Speaker

Jack Bishop

12:00-12:15

Spectroscopy of 23F Following a One-Neutron Removal Reaction (12'+3')

Speaker

Luke Tetley

12:15-12:30 Coulomb Excitation in 80Sr (12'+3')

Speaker

Reuben Russell

12:30 11:00

# Parallel Sessions: Wednesday II Session H

**Session** | **Location:** The Spine, Space Nine | **Convener:** Jack Henderson

11:00-11:15

Tracing two-neutron halos in N=28 isotones: A three-body adventure (12'+3')

Speaker

Jagjit Singh

11:15-11:30

Two-centre harmonic oscillator basis for Skyrme Hartree Fock: alpha clustering in 8Be and 24Mg ->12C+12C as a proof of principles calculations. (12'+3')

Adrian Sanchez Fernandez

11:30-11:45 Finding Excitation Spectra Using a Quantum Computer (12'+3')

Speaker

Isaac Hobday

11:45-12:00 Shape coexistence in neutron-deficient 190-Pb (12'+3')

Speaker

Adrian Montes Plaza

12:00-12:15

Investigation of quadrupole and octupole states in Zr chain using TDHF and QRPA (12'+3')

Speaker

Abhishek Abhishek

12:15-12:30 Suppressed electric quadrupole collectivity in 32Si (12'+3')

Speaker

Jacob Heery

12:30 13:30

# **Parallel Sessions: Wednesday III Session A**

Session | Location: The Spine, Space One | Convener: Eva Vilella Figueras

13:30-13:45

UKRI-MPW1: Simulations and preliminary Evaluations of an HV-CMOS sensor optimised for high radiation tolerance (12'+3')

Speaker

Benjamin Wade

13:45-14:00

Pre-clinical Investigations of Spatially Fractionated Radiotherapy (12'+3')

Speaker

Josie Mcgarrigle

14:00-14:15

Characterization of Secondary Neutrons in Carbon Ion Beam Therapy Using TOPAS Monte Carlo Simulations (12'+3')

Speaker

Fajer Alqahtani

14:15-14:30

Design of an Ion-Acoustics Proof-of-Principle Experiment for LhARA (12'+3')

**Speaker** 

Maria Maxouti

14:30-14:45

A feasibility study using an array of LaBr3(Ce) scintillation detectors as a Compton camera for prompt gamma imaging during BNCT (12'+3')

Speaker

Kiran Nutter

13:30

### **Parallel Sessions: Wednesday III Session B**

**Session** | **Location:** The Spine, Space Two | **Convener:** Jonathan Butterworth

13:30-13:45

Fiducial differential measurement of the production of the Higgs boson through Vector Boson Fusion in the  $\tau+\tau-$  channel with the ATLAS Detector (12'+3')

#### Speaker

Eva Guilloton

13:45-14:00

Differential Cross-Section Measurement of Inclusive W^ $\pm$  ( $\rightarrow$ I^ $\pm$   $\nu$ ) $\gamma$  Process in proton-proton collision at  $\sqrt{s}$ =13 TeV with the ATLAS Detector (12'+3')

#### Speaker

Zuchen Huang

14:00-14:15

Studies on Z-gamma Scattering at 13 TeV with ATLAS Detector (12'+3')

Speaker

Gitanjali Poddar

14:15-14:30 Uncertain systematics in combinations (12'+3')

Speaker

Enzo Canonero

14:30-14:45

First measurement of high-mass ttll and LFU-inspired EFT interpretations with the ATLAS detector (12'+3')

Speaker

Gianna Loeschcke Centeno

14:45 13:30

# **Parallel Sessions: Wednesday III Session C**

Session | Location: The Spine, Space Four | Convener: Rhiannon Susan Jones

13:30-13:45 SoLAr: A novel technology for solar neutrino detection (12'+3')

Speaker

Guilherme Ruiz Ferreira

13:45-14:00

Towards a NC $\pi$ 0 cross section measurement in the Short-Baseline Near Detector. (12'+3')

**Speakers** 

Henry Lay, Henry Lay

14:00-14:15

First results from a relativistic mean field theory implemented in the NEUT neutrino interaction event generator. (12'+3')

Speaker

Mr Jake McKean

14:15-14:30 First look at the background of the LEGEND-200 experiment (12'+3')

Speaker

George Marshall

14:30-14:45 **LEGEND-1000 (12'+3')** 

Speaker

Prof. David Waters

14:45-15:00

Sub-GeV particle identification and tagged photon beam for the Water Cherenkov Test Experiment (12'+3')

Speaker

Alie Adeline Laure Craplet

15:00 13:30

# **Parallel Sessions: Wednesday III Session D**

Session | Location: The Spine, Space Five | Convener: Teppei Katori

13:30-13:45

Production and performance of first DarkSide-20k Photo Detector Units (12'+3')

Speaker

Andrea Marasciulli

13:45-14:00 The QUantum Enhanced Space-Time (QUEST) experiment. (12'+3')

Speaker

Abhinay Patra

14:00-14:15

Overview of the Technology of MAGIS and AION Atom Interferometry Experiments Towards Ultra-light Dark Matter Searches (12'+3')

Speaker

**Gedminas Elertas** 

14:15-14:30

Low energy electron recoil searches within LZ and using FlameNEST for future work (12'+3')

Speaker

Harkirat Riyat

14:30-14:45

Optimisation of fast likelihood functions for dark matter and rare event searches (12'+3')

**Speaker** 

Joshua Green

15:00

13:30

# Parallel Sessions: Wednesday III Session E

 $\textbf{Session} \hspace{0.2cm} | \hspace{0.2cm} \textbf{Location:} \hspace{0.2cm} \textbf{The Spine, Space Seven} \hspace{0.2cm} | \hspace{0.2cm} \textbf{Convener:} \hspace{0.2cm} \textbf{Joe Price}$ 

13:30-13:45

Development of the MAGIS-100 atom interferometer primary imaging system (12'+3')

**Speaker** 

Daniel Wood

13:45-14:00

Superfluid Helium-3 Calorimetry with Quantum Sensor Readout in the QUEST-DMC experiment (12'+3')

Robert Smith

14:00-14:15

Molecular sieve vacuum swing adsorption purification and radon reduction system for gaseous dark matter and rare-event detectors (12'+3')

Speaker

Robert Renz Marcelo Gregorio

14:15-14:30 Direct search for scalar field dark matter with LIGO (12'+3')

Speaker

Alexandre Göttel

14:30-14:45

IWAVE a novel adaptive filtering method and its application to short and long duration gravitational wave searches (12'+3')

Speaker

Ian Hollows

15:00

13:30

# **Parallel Sessions: Wednesday III Session F**

Session | Location: The Spine, Space Eight | Convener: David Hutchcroft

13:30-13:45

Search for the very rare  $B^+ \rightieq e^+ e^- = e^-$  electroweak penguin decay at LHCb (12'+3')

**Speaker** 

Richard Morgan Williams

13:45-14:00

Search for the Lepton Flavour Violating Decay  $\Lambda b \to \Lambda(1520) \mu e$  at the LHCb Detector (12'+3')

Speaker

Dan Thompson

14:00-14:15

Novel sources and uses of quantum-correlated charm systems (12'+3')

Speaker

Paras Naik

14:15-14:30

Measurement of the Z Mass at LHCb with 2016 pp collision data (12'+3')

Speaker

**Emir Muhammad** 

14:30-14:45 CMS Run 3 RK measurement and di-electron triggers (12'+3')

Speaker

Jay Odedra

14:45-15:00

A Top Friendship: Measurement of ttH production in the H(bb) decay channel at ATLAS with Transformer Networks (12'+3')

Speaker

Levi Evans

13:30

### Parallel Sessions: Wednesday III Session G

**Session** | **Location:** The Spine, Space Six | **Convener:** James Keatings

13:30-13:45 The New MARA-LEB Facility and Experimental Prospects (12'+3')

Speaker

Jorge Romero

13:45-14:00 Lifetime measurements in 53Ca (12'+3')

#### Speaker

Sidong Chen

14:00-14:15

High-Spin Gamma-Ray Spectroscopy at the Proton Drip Line: The Study of 131Eu (12'+3')

#### **Speaker**

Conor Sullivan

14:15-14:30

Octupole correlations in neutron deficient plutonium isotopes (12'+3')

#### **Speaker**

Hamid Ayatollahzadeh

14:30-14:45

Electromagnetic moments of ground and excited states calculated in nearly spherical and well-deformed odd nuclei (12'+3')

Speaker

Jacek Dobaczewski

15:00 13:30

### Parallel Sessions: Wednesday III Session H

Session | Location: The Spine, Space Nine | Convener: Philippos Papadakis

13:30-13:45

In-source Laser Spectroscopy Studies of Neutron-rich Thallium at IDS/ RILIS-**ISOLDE (12'+3')** 

Speaker

Zixuan Yue

13:45-14:00 Shape studies in neutron-rich cerium isotopes (12'+3')

Speaker

Maria-Magdalini Satrazani

14:00-14:15

Decay spectroscopy of isomerically pure 178Aug,m at the ISOLDE Decay Station, **CERN (12'+3')** 

Speaker

Christopher Page

14:15-14:30

Onset of deformation in the neutron-rich krypton isotopes with the ISOLDE Solenoidal Spectrometer (12'+3')

Speaker

Annie Dolan

14:30-14:45

Decays of K isomers in the extremely deformed neutron-deficient A = 130 region (12'+3')

Speaker

Andy Briscoe

14:45-15:00

Investigating nucleon-nucleon correlations through QFS reactions (12'+3')

Speaker

Ryo Taniuchi