

2026 NUPP summer school



Report of Contributions

Contribution ID: 1

Type: **not specified**

QFT/SM

Monday, 19 January 2026 09:05 (2 hours)

Presenter: Prof. KOBAKHIDZE, Archil

Session Classification: Lectures

Contribution ID: 2

Type: **not specified**

Accelerators

Monday, 19 January 2026 11:30 (1h 30m)

Presenter: Dr SHEEHY, Suzie (University of Oxford and University of Melbourne)

Session Classification: Lectures

Contribution ID: 3

Type: **not specified**

Colliders and detectors

Monday, 19 January 2026 14:00 (2 hours)

Presenter: EGEDE, Ulrik (Monash University (AU))

Session Classification: Lectures

Contribution ID: 4

Type: **not specified**

Nuclear theory

Monday, 19 January 2026 16:30 (1h 30m)

Presenter: SIMENEL, Cedric

Session Classification: Lectures

Contribution ID: 5

Type: **not specified**

Accelerators

Tuesday, 20 January 2026 09:00 (2 hours)

Presenter: Dr SHEEHY, Suzie (University of Oxford and University of Melbourne)

Session Classification: Lectures

Contribution ID: 6

Type: **not specified**

QFT/SM

Tuesday, 20 January 2026 11:30 (1h 30m)

Presenter: Prof. KOBAKHIDZE, Archil

Session Classification: Lectures

Contribution ID: 7

Type: **not specified**

Nuclear theory

Tuesday, 20 January 2026 14:00 (2 hours)

Presenter: SIMENEL, Cedric

Session Classification: Lectures

Contribution ID: **8**

Type: **not specified**

Colliders and detectors

Tuesday, 20 January 2026 16:30 (1h 30m)

Presenter: EGEDE, Ulrik (Monash University (AU))

Session Classification: Lectures

Contribution ID: 9

Type: **not specified**

Flavour physics

Thursday, 22 January 2026 09:00 (2 hours)

Presenter: EGEDE, Ulrik (Monash University (AU))

Session Classification: Lectures

Contribution ID: **10**

Type: **not specified**

lattice QCD

Thursday, 22 January 2026 14:00 (2 hours)

Presenter: YOUNG, Ross

Session Classification: Lectures

Contribution ID: 11

Type: **not specified**

Neutrino physics

Thursday, 22 January 2026 11:30 (1h 30m)

Presenter: Dr BIGARAN, Innes (Fermilab and Northwestern University)

Session Classification: Lectures

Contribution ID: **12**

Type: **not specified**

DM direct detection

Friday, 23 January 2026 11:35 (1h 30m)

Presenter: FRUTH, Theresa (University of Sydney)

Session Classification: Lectures

Contribution ID: 13

Type: **not specified**

Neutrino physics

Thursday, 22 January 2026 16:30 (1h 30m)

Presenter: Dr BIGARAN, Innes (Fermilab and Northwestern University)

Session Classification: Lectures

Contribution ID: **14**

Type: **not specified**

DM direct detection

Friday, 23 January 2026 09:00 (2 hours)

Presenter: O'HARE, Ciaran (Sydney)

Session Classification: Lectures

Contribution ID: 15

Type: **not specified**

Geant4

Friday, 23 January 2026 16:30 (1h 30m)

Presenter: Dr BIGNELL, Lindsey (Department of Nuclear Physics and Accelerator Applications, The Australian National University)

Session Classification: Lectures

Contribution ID: **16**

Type: **not specified**

Geant4

Friday, 23 January 2026 14:00 (2 hours)

Presenter: Dr BIGNELL, Lindsey (Department of Nuclear Physics and Accelerator Applications, The Australian National University)

Session Classification: Lectures

Contribution ID: 17

Type: **not specified**

A new idea for relating the asymmetric dark matter mass scale to the proton mass

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: PEREZ, Rafael

Session Classification: Poster session

Contribution ID: **18**

Type: **not specified**

All-orders inclusion of relativistic effects in atomic structure theory

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: SKOUFRIS, Andoni (The University of Queensland)

Session Classification: Poster session

Contribution ID: 19

Type: **not specified**

Effect of the Weak Quadrupole Moment in Atoms and Molecules

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: RAY, Shannon (University of Queensland)

Session Classification: Poster session

Contribution ID: **20**

Type: **not specified**

Constraining the nuclear magnetisation distribution with muonic atoms

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: HIRANANDANI, Thakur Giriraj (the University of Queensland)

Session Classification: Poster session

Contribution ID: 21

Type: **not specified**

Coulomb Excitation Studies of Dysprosium-162

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: PERISSINOTTO, Thomas (The Australian National University)

Session Classification: Poster session

Contribution ID: 22

Type: **not specified**

Fission of Pre-Actinide Nuclei

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: TRAN, Tony (The Australian National University)

Session Classification: Poster session

Contribution ID: 23

Type: **not specified**

Investigation of excitation energy dependence of fission modes in actinides through transfer-induced fission

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: LEE, Hyeonseop (Australian National University)

Session Classification: Poster session

Contribution ID: 24

Type: **not specified**

Machine Learning for Radiation Simulation in Time Sensitive Applications

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: STUCHBERY, James (Department of Nuclear Physics and Accelerator Applications, Research School of Physics, Australian National University.)

Session Classification: Poster session

Contribution ID: 25

Type: **not specified**

Modelling Energy Dissipation in a Time-Dependent Coupled Channels Model for Fusion

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: WEBBER, Maggie (Australian National University)

Session Classification: Poster session

Contribution ID: **26**

Type: **not specified**

Non-Perturbative Spinor Tunnelling in Interacting Quantum Fields

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: FLEMING, Max

Session Classification: Poster session

Contribution ID: 27

Type: **not specified**

Searching for a new fission mode in ^{220}Ra

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: LAKELIN, Misty

Session Classification: Poster session

Contribution ID: **28**

Type: **not specified**

Searching for triaxial deformation in highly exotic nuclei towards the neutron drip line

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: JOHNSTONE, Luke

Session Classification: Poster session

Contribution ID: 29

Type: **not specified**

Shell Model Investigations Around N = 28

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: BABU, Aditya (Australian National University)

Session Classification: Poster session

Contribution ID: **30**

Type: **not specified**

Pepperpot Profiling: Probing Beam Properties with Pepperpot Devices

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: STEWART, Ryan

Session Classification: Poster session

Contribution ID: 31

Type: **not specified**

A new idea for relating the asymmetric dark matter mass scale to the proton mass

Presenter: PEREZ, Rafael

Session Classification: Poster session

Contribution ID: 32

Type: **not specified**

Direct Detection of Dark Photons

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: WILLIAMS, Narise (The University of Physics)

Session Classification: Poster session

Contribution ID: 33

Type: **not specified**

Effectively dark matter

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: FANG, Laura (The University of Melbourne)

Session Classification: Poster session

Contribution ID: 34

Type: **not specified**

How Long Do Neutrons Live?

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: PERKS, Joshua (The University of Adelaide)

Session Classification: Poster session

Contribution ID: 35

Type: **not specified**

Neutrino masses and their temperament

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: VANDELEUR, James (University of New South Wales (UNSW))

Session Classification: Poster session

Contribution ID: 36

Type: **not specified**

ORGAN-Low : Probing Sub- μ eV Axion Dark Matter with Optimised Haloscope Design

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: SINGH, Raj Aryan (Swinburne University of Technology)

Session Classification: Poster session

Contribution ID: 37

Type: **not specified**

Probing the Pion using Lattice QCD

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: VAN SCHALKWYK, Ian

Session Classification: Poster session

Contribution ID: 38

Type: **not specified**

ResNet Makes Event Reconstruction at Hyper-Kamiokande Faster and More Accurate

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: ATTA, Andrew (Monash University)

Session Classification: Poster session

Contribution ID: 39

Type: **not specified**

Spin tagging of b-hadrons

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: JELAVIC, Alexander (Monash University)

Session Classification: Poster session

2026 NUPP sum ⋯ / Report of Contributions

Toponium? Yay or Nay...

Contribution ID: 40

Type: **not specified**

Toponium? Yay or Nay···

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: LOVISON, Amelia (Adelaide University (AU))

Session Classification: Poster session

Contribution ID: 41

Type: **not specified**

UAV borne organic scintillation detectors for radiation surveys

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: ROUFOS, Aithan (University of Adelaide)

Session Classification: Poster session

Contribution ID: 42

Type: **not specified**

Charm Baryon Mixing and SU(3) Flavour Symmetry Breaking from Lattice QCD

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: ABDIRASHID ALI, Lula (University of Adelaide)

Session Classification: Poster session

Contribution ID: 43

Type: **not specified**

Probing nuclear structure via hyperfine splitting in Yb-173

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: HASTED, Jayden (The University of Queensland)

Session Classification: Poster session

Contribution ID: 44

Type: **not specified**

The Cancellation of IR Divergences at Zero and Finite Temperature

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: BEOCANIN, Marko (University of New South Wales)

Session Classification: Poster session

Contribution ID: 45

Type: **not specified**

QED Radiation in Hadron Decays

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: MORGANTE, Giacomo (Monash University)

Session Classification: Poster session

Contribution ID: 47

Type: **not specified**

Axion Detection Using Atomic Clocks

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: PHAM, Isabella

Session Classification: Poster session

Contribution ID: **48**

Type: **not specified**

Study of proton elastic scattering on carbon-12 using MCAS

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: Ms BHATTACHARYYA, Deeparna (The University of New South Wales, Australia)

Session Classification: Poster session

Contribution ID: 49

Type: **not specified**

The combinatorial method of Bc production cross section measurement

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: CHIZHIK, Gleb (Monash University (AU))

Session Classification: Poster session

Contribution ID: 50

Type: **not specified**

The cross section of Bc+ production relative to B+ production mediated by double parton scattering (DPS) and single parton scattering (SPS)

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: LI, Wanxia

Session Classification: Poster session

Contribution ID: 51

Type: **not specified**

Dark Matter Induced Nucleon Decay Through the Neutron Portal

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: VERDE, Michael (The University of Melbourne)

Session Classification: Poster session

Contribution ID: 52

Type: **not specified**

Renormalization Group Running of Neutrino Masses in the Scotogenic Model

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: ZHANG, Weihang

Session Classification: Poster session

Contribution ID: 53

Type: **not specified**

Atomic parity violation and neglected inseparable correlation corrections to polarisabilities.

Monday, 19 January 2026 18:00 (1h 30m)

Presenter: EASTON, Jack (University of Queensland)

Session Classification: Poster session

Contribution ID: 54

Type: **not specified**

Welcome

Monday, 19 January 2026 09:00 (5 minutes)

Authors: Dr MITCHELL, AJ (Australian National University); SENGUPTA, Dipan (University of New South Wales, Sydney, Australia); Dr ZANOTTI, James (The University of Adelaide); SCHMIDT, Michael (UNSW Sydney); FRUTH, Theresa (University of Sydney)

Presenters: Dr MITCHELL, AJ (Australian National University); SENGUPTA, Dipan (University of New South Wales, Sydney, Australia); Dr ZANOTTI, James (The University of Adelaide); SCHMIDT, Michael (UNSW Sydney); FRUTH, Theresa (University of Sydney)

Session Classification: Lectures

Contribution ID: 55

Type: **not specified**

Conclusion

Friday, 23 January 2026 18:00 (5 minutes)

Presenters: Dr MITCHELL, AJ (Australian National University); SENGUPTA, Dipan (University of New South Wales, Sydney, Australia); SCHMIDT, Michael (UNSW Sydney); FRUTH, Theresa (University of Sydney)

Session Classification: Lectures

Contribution ID: **56**

Type: **not specified**

Feedback opportunity

Friday, 23 January 2026 11:30 (5 minutes)

Presenter: SCHMIDT, Michael (UNSW Sydney)

Session Classification: Lectures