

## **Session Program**

**30 November 2025 to 5 December 2025**



**AIP summer meeting 2025**

***Atomic and Molecular Physics***

Building 40, Hope Theatre  
University of Wollongong Northfields Avenue Wollongong NSW 2522

## Thursday 4 December

10:40

### Atomic and Molecular Physics

**Session** |

**Location:** Building 40, Hope Theatre, University of Wollongong Northfields Avenue Wollongong NSW 2522

10:40-11:10

#### Beyond Mean-Field: Modelling Atom Interactions in Compact Rotation Sensors

**Speaker**

Jessica Eastman

11:10-11:25

#### A vibronic approach to the hyperfine interaction observed in biomagnetosensors

**Speaker**

Anjay Manian

11:25-11:40

#### Measurement of nuclear charge radius difference in metastable helium isotopes

**Speaker**

Kannan Suresh Kumar

11:40-11:55

#### Accessing higher-order nuclear magnetization moments with muonic atoms

**Speaker**

Thakur Giriraj Hiranandani

11:55-12:10

#### Axion Dark Matter Detection Using Atomic Clocks

**Speaker**

Isabella Pham

12:10-12:25

#### Atomic parity violation and the caesium polarisability puzzle: A possible solution from inseparable contributions to perturbative expansions

**Speaker**

Jack Easton

12:25-12:40

#### Fast and low-loss, all-optical phase modulation in warm rubidium vapour

**Speaker**

William O C Davis

12:40

13:40

### Atomic and Molecular Physics

**Session** |

**Location:** Building 40, Hope Theatre, University of Wollongong Northfields Avenue Wollongong NSW 2522

13:40-13:55

#### Improved differential charge radii of heavy alkali metals using isotope shift

**Speaker**

Dr Amy Geddes

13:55-14:10

**Metastable Helium Atom Production by Positron Impact****Speaker**

Mr Liam Wymer

14:10-14:25

**Atomic clocks, space-time variation of the fundamental constants and dark matter****Speaker**

Vladimir Dzuba

14:25-14:40

**Polarised Positron Interactions with Cold, Polarised Atoms****Speaker**

Matt Best

14:40-14:55

**Recent Progress in the Ultranarrow Linewidth Multiwatt Diamond Raman Lasers in the Visible****Speaker**

Osama Terra

14:55-15:10

**Demonstration of a photonic time-frequency Fourier transform and temporal double slit****Speaker**

Ankit Papneja

15:10

16:10

**Atomic and Molecular Physics****Session |****Location:** Building 40, Hope Theatre, University of Wollongong Northfields Avenue Wollongong NSW 2522

16:10-16:40

**Nuclear Clock and the Search for New Physics****Speaker**

Victor Flambaum

16:40-16:55

**Detecting dark matter with atomic systems****Speaker**

Ashlee Caddell

16:55-17:10

**Coarsening dynamics of a spinor condensate in the broken-axisymmetric phase****Speaker**

April Weyling

17:10-17:25

**Probing nuclear structure via hyperfine splittings in Yb-173****Speaker**

Jayden Hasted

17:25-17:40

**Probing the nuclear structure with precision atomic theory for heavy and exotic atoms.****Speaker**

Odile Smits

18:10