

**2026 IOP Conference**

**Report of Contributions**

Contribution ID: 7

Type: **not specified**

## **Radioactive ion beams for real-time PET-guided adaptive particle therapy**

*Tuesday, 14 April 2026 09:00 (30 minutes)*

**Presenter:** BOSCOLO, Dr Daria (GSI, Germany)

**Session Classification:** Plenary

Contribution ID: 8

Type: **not specified**

# Unveiling nucleon structure through measurements of Generalized Parton Distributions

*Wednesday, 15 April 2026 14:30 (30 minutes)*

**Presenter:** NICCOLAI, Prof. Silvia (IJClab, France)

**Session Classification:** Plenary

Contribution ID: 9

Type: **not specified**

## **Nuclear structure and dynamics at finite temperature**

*Monday, 13 April 2026 11:30 (30 minutes)*

**Presenter:** PAAR, Prof. Dr sc. Nils (University of Zagreb, Croatia)

**Session Classification:** Plenary

Contribution ID: **10**

Type: **not specified**

# Quantum algorithms for the nuclear shell model

*Tuesday, 14 April 2026 13:30 (30 minutes)*

**Presenter:** HUGUET, Dr Arnau Rios (University of Barcelona, Spain)

**Session Classification:** Plenary

Contribution ID: 11

Type: **not specified**

## The Path to Commercial Fusion Energy

*Tuesday, 14 April 2026 14:00 (30 minutes)*

**Presenter:** SHAND, Dr Chantal (UK Atomic Energy Authority, UK)

**Session Classification:** Plenary

Contribution ID: 12

Type: **not specified**

## **Storage Rings for Nuclear Physics and Astrophysics**

*Monday, 13 April 2026 12:00 (30 minutes)*

**Presenter:** SINGH SIDHU, Dr Ragandeep (University of Surrey, UK)

**Session Classification:** IoP prize winner

Contribution ID: 21

Type: **not specified**

## **Development of collectivity beyond N=50 in the Ge and Se isotopes**

*Tuesday, 14 April 2026 14:30 (15 minutes)*

**Presenter:** BROWNE, Dr Frank (University of Manchester)

**Session Classification:** Featured talks

Contribution ID: 22

Type: **not specified**

## **Stress-Testing AGATA: Benchmarking the High-Spin Capabilities of the $1\pi$ AGATA Spectrometer at LNL**

*Tuesday, 14 April 2026 14:45 (15 minutes)*

**Presenter:** SULLIVAN, Dr Connor (University of Liverpool)

**Session Classification:** Featured talks

Contribution ID: 23

Type: **not specified**

## **Evidence of isomeric states in 183,184Ta.**

*Tuesday, 14 April 2026 10:00 (15 minutes)*

**Presenter:** DOSHI, Mr Siddharth (University of Brighton)

**Session Classification:** Featured talks

Contribution ID: 24

Type: **not specified**

## **First identification of resonant states in the $^{45}\text{V}(p,\gamma)^{46}\text{Cr}$ reaction and their influence on the production of $^{44}\text{Ti}$ in core-collapse supernovae**

*Tuesday, 14 April 2026 10:15 (15 minutes)*

**Presenter:** COUSINS, Dr Chris (University of Surrey)

**Session Classification:** Featured talks

Contribution ID: 25

Type: **not specified**

## **Quantum entanglement of positron annihilation gamma –fundamental research applied to Positron Emission Tomography (PET) imaging**

*Monday, 13 April 2026 14:45 (15 minutes)*

**Presenter:** STEPHENSON, Ms Laura (University of York)

**Session Classification:** Featured talks

Contribution ID: 26

Type: **not specified**

## **Fission studies using quasi-free scattering reactions in inverse kinematics**

*Wednesday, 15 April 2026 13:30 (15 minutes)*

**Presenter:** BENLLIURE, Dr Jose (csic - Universitat De València)

**Session Classification:** Featured talks

Contribution ID: 27

Type: **not specified**

## **Detector-Aware Neural Networks for Particle Identification in Pb-Pb Collisions: Feature Set Embedding with Adaptive Attention Mechanisms**

*Monday, 13 April 2026 15:00 (15 minutes)*

**Presenter:** FORYNSKI, Mr Robert (University Of Derby & CERN)

**Session Classification:** Featured talks

Contribution ID: 28

Type: **not specified**

## **Anapole Moment Calculated within Nuclear DFT**

*Wednesday, 15 April 2026 13:45 (15 minutes)*

**Presenter:** WIBOWO, Dr Herlik (University of York)

**Session Classification:** Featured talks

Contribution ID: 29

Type: **not specified**

**TBC**

*Monday, 13 April 2026 11:00 (30 minutes)*

**Presenter:** Prof. APRAHAMIAN, Ani (University of Notre Dame, USA)

**Session Classification:** Plenary

Contribution ID: **31**

Type: **not specified**

**TBC**

*Wednesday, 15 April 2026 14:00 (30 minutes)*

**Presenter:** Prof. SMITH, John (University of the West of Scotland)

**Session Classification:** Plenary

Contribution ID: 32

Type: **not specified**

## **Exploring the key astrophysical reaction $^{12}\text{C}(\alpha,\gamma)$ with TPCs and $\gamma$ beams**

*Wednesday, 15 April 2026 09:30 (30 minutes)*

**Presenter:** Dr SMITH, Robin (Sheffield Hallam University)

**Session Classification:** Plenary

Contribution ID: **33**

Type: **not specified**

**TBC**

*Wednesday, 15 April 2026 10:00 (30 minutes)*

**Presenter:** Dr IZZARD, Rob (University of Surrey)

**Session Classification:** Plenary

Contribution ID: **34**

Type: **not specified**

**TBC**

*Tuesday, 14 April 2026 09:30 (30 minutes)*

**Presenter:** Dr MCKINNON, Bryan (University of Glasgow)

**Session Classification:** Plenary

Contribution ID: 35

Type: **not specified**

## **Extending the Chart of Nuclides: How to Create New (Super)Heavy Nuclei**

*Monday, 13 April 2026 13:45 (30 minutes)*

**Presenter:** Dr HEINZ, Sophia (GSI, Germany)

**Session Classification:** Plenary

Contribution ID: 36

Type: **not specified**

## **Neutrino–Nucleus Interactions from Reactors to the Cosmos: Precision Measurements and New Physics Opportunities**

*Monday, 13 April 2026 14:15 (30 minutes)*

**Presenter:** Dr MARTINEZ-SOLER, Ivan (University of Durham)

**Session Classification:** Plenary

Contribution ID: 37

Type: **not specified**

## **Production of Terbium-161 at HF-ADNeF**

*Monday, 13 April 2026 15:45 (15 minutes)*

**Presenter:** CONROY, Max (Birmingham)

**Session Classification:** Parallel session

Contribution ID: 38

Type: **not specified**

## **Nuclear and radiation backgrounds for the BUTTON anti-neutrino detector testbed at Boulby**

*Monday, 13 April 2026 16:15 (15 minutes)*

**Presenter:** HOPKINS, William (University of Glasgow)

**Session Classification:** Parallel session

Contribution ID: 39

Type: **not specified**

## **Nuclear Reaction Studies at NIF: Establishing the Method and Recent Results**

*Monday, 13 April 2026 16:00 (15 minutes)*

**Presenter:** Dr PITMAN-WEYMOUTH, Daniel (Atomic Weapons Establishment)

**Session Classification:** Parallel session

Contribution ID: 40

Type: **not specified**

## **Probing Short Range Correlations via (p,pd) Quasi-Free Scattering reactions**

*Monday, 13 April 2026 16:45 (15 minutes)*

**Presenter:** WHITEHEAD, Matthew (University of York)

**Session Classification:** Parallel session

Contribution ID: 41

Type: **not specified**

## **Detecting water in spent nuclear fuel using the prompt neutron capture reaction on hydrogen**

*Monday, 13 April 2026 16:30 (15 minutes)*

**Presenter:** GREEN, Brendan (University of Lancaster)

**Session Classification:** Parallel session

Contribution ID: 42

Type: **not specified**

## **A Compact Multimode Detector for the Decommissioning of Irradiated Graphite**

*Monday, 13 April 2026 15:45 (15 minutes)*

**Presenter:** HUNTER, Nia (University of Glasgow)

**Session Classification:** Parallel session

Contribution ID: 43

Type: **not specified**

# Transforming Inorganic Scintillators Into Neutron Spectrometers

*Monday, 13 April 2026 16:00 (15 minutes)*

**Presenter:** Dr O'NEILL, Joseph (University of Birmingham)

**Session Classification:** Parallel session

Contribution ID: 44

Type: **not specified**

## **The Structure of Neutron-Rich $N \sim 126$ Nuclei**

*Monday, 13 April 2026 16:15 (15 minutes)*

**Presenter:** Dr BARTRAM, Gee (University of Surrey)

**Session Classification:** Parallel session

Contribution ID: 45

Type: **not specified**

## **Competing decay modes from the $25/2^-$ spin-gap isomer in $^{155}\text{Lu}$**

*Monday, 13 April 2026 16:30 (15 minutes)*

**Presenter:** Dr BRISCOE, Andy (University of Liverpool)

**Session Classification:** Parallel session

Contribution ID: 46

Type: **not specified**

## **Investigations of the unbound states in 20C**

*Monday, 13 April 2026 16:45 (15 minutes)*

**Presenter:** Dr CHEN, Sidong (University of York)

**Session Classification:** Parallel session

Contribution ID: 47

Type: **not specified**

## **Exploring intense photon/muon beams as Dark Matter detectors**

*Monday, 13 April 2026 15:45 (15 minutes)*

**Presenter:** Dr BASHKANOV, Mikhail (University of York)

**Session Classification:** Parallel session

Contribution ID: 48

Type: **not specified**

## **GEn-RP: Neutron Electric Form Factor Measurement using Recoil Polarimetry at Jefferson Lab**

*Monday, 13 April 2026 16:00 (15 minutes)*

**Presenter:** CHEYNE, Andrew (University Of Glasgow)

**Session Classification:** Parallel session

Contribution ID: 49

Type: **not specified**

# Quantum Machine Learning Meets Predicting Nuclear Binding Energy

*Monday, 13 April 2026 16:15 (15 minutes)*

**Presenter:** Prof. AKKOYUN, Serkan

**Session Classification:** Parallel session

Contribution ID: 50

Type: **not specified**

## **Investigating the boundaries of enhanced octupole collectivity in the rare-earth region**

*Monday, 13 April 2026 16:30 (15 minutes)*

**Presenter:** Dr SPAGNOLETTI, Pietro (University of Liverpool)

**Session Classification:** Parallel session

Contribution ID: 51

Type: **not specified**

## **Direct Measurements of Low-Lying Monopole Transitions in $^{28}\text{Si}$**

*Monday, 13 April 2026 16:45 (15 minutes)*

**Presenter:** TOWERS, Jacob (University of York)

**Session Classification:** Parallel session

Contribution ID: 52

Type: **not specified**

## **Evidence of the $9\text{B}(1/2^+)$ state in the $12\text{C}(p,\alpha)9\text{B}$ reaction**

*Tuesday, 14 April 2026 11:30 (15 minutes)*

**Presenter:** BROOKS, Alex (University of Birmingham)

**Session Classification:** Parallel session

Contribution ID: 53

Type: **not specified**

## **Constraining the density-dependence of the symmetry energy by cross section measurements at R3B**

*Tuesday, 14 April 2026 11:00 (15 minutes)*

**Presenter:** Dr PONNATH, Lukas (University of York)

**Session Classification:** Parallel session

Contribution ID: 54

Type: **not specified**

## **Lifetime measurements in neutron-rich barium and cerium isotopes using the fast-timing technique**

*Tuesday, 14 April 2026 11:45 (15 minutes)*

**Presenter:** ROWNTREE, Faye (University of Liverpool)

**Session Classification:** Parallel session

Contribution ID: 55

Type: **not specified**

## **B(E2) measurements of heavy $N = Z$ nuclei at FRIB**

*Tuesday, 14 April 2026 12:00 (15 minutes)*

**Presenter:** Prof. BENTLEY, Michael (University of York)

**Session Classification:** Parallel session

Contribution ID: 56

Type: **not specified**

## **Uncertainty quantification of spin-parity assignments in $^{19}\text{Ne}$ with ML methods**

*Tuesday, 14 April 2026 11:15 (15 minutes)*

**Presenter:** WOOD, Benjamin (University of Birmingham)

**Session Classification:** Parallel session

Contribution ID: 57

Type: **not specified**

## **Position resolution estimation of Adaptive Grid search algorithm for multi-site interactions position determination in 'SIGMA' detector.**

*Tuesday, 14 April 2026 12:00 (15 minutes)*

**Presenter:** ALTASAN, Nawaf (University of Liverpool)

**Session Classification:** Parallel session

Contribution ID: 58

Type: **not specified**

## **Particle identification with Bragg spectroscopy at ISOLDE Solenoidal Spectrometer**

*Tuesday, 14 April 2026 11:00 (15 minutes)*

**Presenter:** WŁODARCZYK, Michał (University of Manchester)

**Session Classification:** Parallel session

Contribution ID: 59

Type: **not specified**

## **A Novel Method for PET Radioisotope Photoproduction**

*Tuesday, 14 April 2026 11:15 (15 minutes)*

**Presenter:** STONE, Josephine (University of York)

**Session Classification:** Parallel session

Contribution ID: **60**

Type: **not specified**

## **Differential cross section measurements for $(n,\alpha)$ reactions with a Time Projection Chamber**

*Tuesday, 14 April 2026 11:30 (15 minutes)*

**Presenter:** Dr BISHOP, Jack (University of Birmingham)

**Session Classification:** Parallel session

Contribution ID: **61**

Type: **not specified**

# **Deep Learning for Enhanced Muon Tomography Imaging**

*Tuesday, 14 April 2026 11:45 (15 minutes)*

**Presenter:** O'DONNELL, William (University of Glasgow)

**Session Classification:** Parallel session

Contribution ID: 62

Type: **not specified**

## **The dynamical evolution of the parity splitting energy in nuclei with octupole deformation**

*Tuesday, 14 April 2026 11:00 (15 minutes)*

**Presenter:** Dr BUDACA, Radu (Horia Hulubei, Romania)

**Session Classification:** Parallel session

Contribution ID: 63

Type: **not specified**

## **Recent developments for microscopic optical potentials for nucleon-nucleus elastic scattering**

*Tuesday, 14 April 2026 11:15 (15 minutes)*

**Presenter:** PITT, Ashley (University of Surrey)

**Session Classification:** Parallel session

Contribution ID: 64

Type: **not specified**

## **Radiative decay and electromagnetic moments in $^{229}\text{Th}$ determined within nuclear DFT**

*Tuesday, 14 April 2026 12:00 (15 minutes)*

**Presenter:** RESTREPO-GIRALDO, Alejandro (University of York)

**Session Classification:** Parallel session

Contribution ID: 65

Type: **not specified**

## **Lifetime measurements of the 2+ state in $^{128}\text{Nd}$ and $^{132}\text{Sm}$**

*Tuesday, 14 April 2026 11:30 (15 minutes)*

**Presenter:** Dr HEERY, Jacob (University of Surrey)

**Session Classification:** Parallel session

Contribution ID: 66

Type: **not specified**

## **Laser spectroscopy measurements of $^{151-175}\text{Tm}$ . On behalf of the COLLAPS collaboration**

*Tuesday, 14 April 2026 11:45 (15 minutes)*

**Presenter:** HUGHES, Jack (University of Liverpool)

**Session Classification:** Parallel session

Contribution ID: 67

Type: **not specified**

## **Pixel-based Target Recoil Tracker (TRT) for R3B at FAIR**

*Wednesday, 15 April 2026 11:00 (15 minutes)*

**Presenter:** AMORIM, Beatriz (University of York)

**Session Classification:** Parallel session

Contribution ID: 68

Type: **not specified**

## **Development of novel LaBr<sub>3</sub>(Ce) Detector Modules for Nuclear Astrophysics Applications**

*Wednesday, 15 April 2026 11:15 (15 minutes)*

**Presenter:** DUTTA, Sulagna (University of West of Scotland)

**Session Classification:** Parallel session

Contribution ID: 69

Type: **not specified**

## **Elucidating Strangeness with Electromagnetic Probes**

*Wednesday, 15 April 2026 11:30 (15 minutes)*

**Presenter:** ACAR, Asli (University of York)

**Session Classification:** Parallel session

Contribution ID: 70

Type: **not specified**

## **Preliminary 2Pi0 channel analysis at GlueX**

*Wednesday, 15 April 2026 11:45 (15 minutes)*

**Presenter:** BERGER, Alexandra (University of Glasgow)

**Session Classification:** Parallel session

Contribution ID: 71

Type: **not specified**

## **Jet measurements with the ALICE experiment at the LHC**

*Wednesday, 15 April 2026 12:00 (15 minutes)*

**Presenter:** Dr NORMAN, Jaime (University of Liverpool)

**Session Classification:** Parallel session

Contribution ID: 72

Type: **not specified**

## **A direct measurement of the $^{27}\text{Al}(\alpha,p)^{30}\text{Si}$ cross section with TACTIC**

*Wednesday, 15 April 2026 11:30 (15 minutes)*

**Presenter:** CYSTER, Annabelle (University of York)

**Session Classification:** Parallel session

Contribution ID: 73

Type: **not specified**

## **Probing the $10B + \alpha$ pathway for primordial stars at LUNA: Experimental techniques and preliminary results**

*Wednesday, 15 April 2026 12:00 (15 minutes)*

**Presenter:** BONNELL, Rhys (University of Edinburgh)

**Session Classification:** Parallel session

Contribution ID: 74

Type: **not specified**

## **First Cross-Section Measurements of the $^{93}\text{Sr}(\alpha, \text{xn})^{95-96}\text{Zr}$ Reactions: Implications for the Weak r-Process**

*Wednesday, 15 April 2026 11:00 (15 minutes)*

**Presenter:** JAMESON, Claire (University of Surrey)

**Session Classification:** Parallel session

Contribution ID: 75

Type: **not specified**

## **Beta-decay spectroscopy of proton-rich N=82 isotones**

*Wednesday, 15 April 2026 11:15 (15 minutes)*

**Presenter:** ALWADIE, Norah (University of Liverpool)

**Session Classification:** Parallel session

Contribution ID: 76

Type: **not specified**

## **A Novel Approach to Observing Nuclear Excitation by Electron Capture**

*Wednesday, 15 April 2026 11:45 (15 minutes)*

**Presenter:** FULLER, John (University of York)

**Session Classification:** Parallel session

Contribution ID: 77

Type: **not specified**

## **Decay Spectroscopy of Medical Imaging Isotope Terbium-152**

*Wednesday, 15 April 2026 11:00 (15 minutes)*

**Presenter:** O'SULLIVAN, Edward (University of Surrey)

**Session Classification:** Parallel session

Contribution ID: 78

Type: **not specified**

## **Water neutron moderation of AmBe: a computational approach with Geant4**

*Wednesday, 15 April 2026 11:15 (15 minutes)*

**Presenter:** FALEZZA, Filippo (The University of Birmingham)

**Session Classification:** Parallel session

Contribution ID: 79

Type: **not specified**

## **Shell evolution and neutron halo formation in heavy sodium isotopes**

*Wednesday, 15 April 2026 11:30 (15 minutes)*

**Presenter:** Dr SINGH, Jagjit (University of Manchester)

**Session Classification:** Parallel session

Contribution ID: **80**

Type: **not specified**

## **Unveiling proton-neutron pairing in homogeneous and isotropic nuclear matter**

*Wednesday, 15 April 2026 11:45 (15 minutes)*

**Presenter:** BACKES, Betania (University of York)

**Session Classification:** Parallel session

Contribution ID: **81**

Type: **not specified**

## **Thermal effects on neutron capture cross sections using a quantum dynamical approach**

*Wednesday, 15 April 2026 12:00 (15 minutes)*

**Presenter:** LIGHTFOOT, Nicholas (University of Surrey)

**Session Classification:** Parallel session