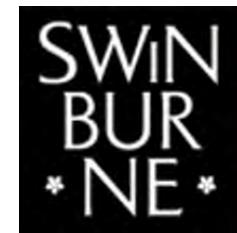


Overview of the ANU Node

Andrew Stuchbery
(ANU Node Manager)

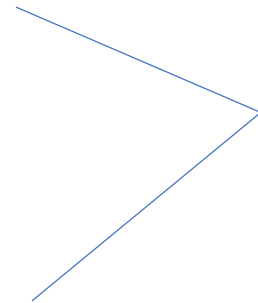


CDM Research themes & people @ ANU



- **Direct detection**

- *Lindsey Bignell*
- Greg Lane
- Andrew Stuchbery
- (+1 tenure track position & 2 PDF)



Zuzana Slavkovska



- **Metrology (Accelerator Mass Spectrometry)**

- *Michaela Froehlich (Chemistry expertise)*
- Steve Tims (replaces CI Toni Wallner, now at Helmholtz-Zentrum Dresden, who becomes a PI)

- **Theory**

- Cedric Simenel
- (*Giorgio Busoni*)



Professional and technical support @ ANU

- **Node administrator**

- *Petra Rickman*



- **Technical support (CAD and construction)**

- Tom Tunningley
 - Steve Battisson
 - Ben Tranter
 - Daniel Tempra (Electronics)
 - *(+1 technical/engineering position)*



SABRE components constructed @ ANU



CDM Research themes @ ANU



- **Direct detection (Talks by Greg Lane and Lindsey Bignell)**
 - Quenching factors for NaI detectors & pulse-shape analysis
 - Cosmic background – activation experiments and modeling
 - Liquid scintillator characterization (light yield, stability, impurities, ...)
 - CYGNUS – TPC prototype
- **Metrology (Talks by Steve Tims and Michaela Froehlich)**
 - Radioisotopes in NaI material for SABRE
 - ^{129}I and ^{210}Pb – requires development of methods
 - ICP-MS with Research School of Earth Sciences (^{40}K)
 - HPGe counting capability & expertise
- **Theory (Talk by Cedric Simenel)**
 - DM interaction with nuclei

- Heavy ion beams
- Pulsed beams
- Neutrons as de facto WIMPS
- Nuclear detection techniques
- Accelerator Mass Spectrometry
- Clean rooms; radiopurity expertise

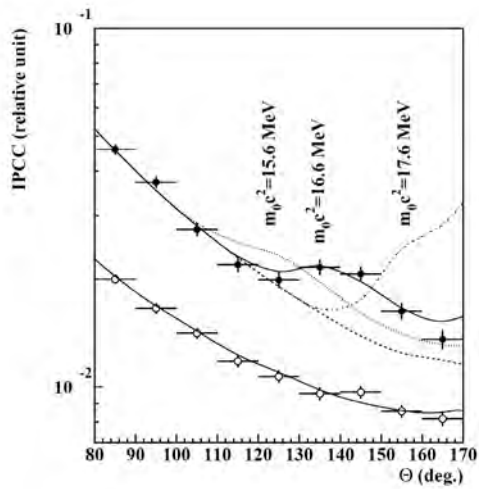
CDM Research themes @ ANU + collaboration



- **Direct detection (Talks by Greg Lane and Lindsey Bignell)**
 - Quenching factors for NaI detectors & pulse-shape analysis
 - Cosmic background – activation experiments and modeling
 - Liquid scintillator characterization (light yield, stability, impurities, ...)
 - CYGNUS – TPC prototype
- **Metrology (Talks by Steve Tims and Michaela Froelich)**
 - Radioisotopes in NaI material for SABRE
 - ^{129}I and ^{210}Pb – requires development of methods (^{210}Pb with ANSTO)
 - ICP-MS with Research School of Earth Sciences (^{40}K)
 - HPGe counting capability & expertise
- **Theory (Talk by Cedric Simenel)**
 - DM interaction with nuclei

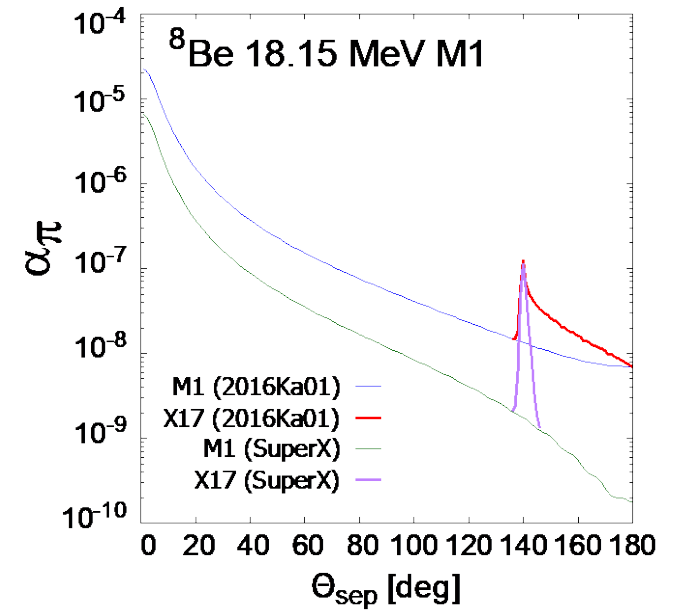
Many activities include collaboration across nodes and/or with partner organizations

Searching for the X17 boson @ ANU*

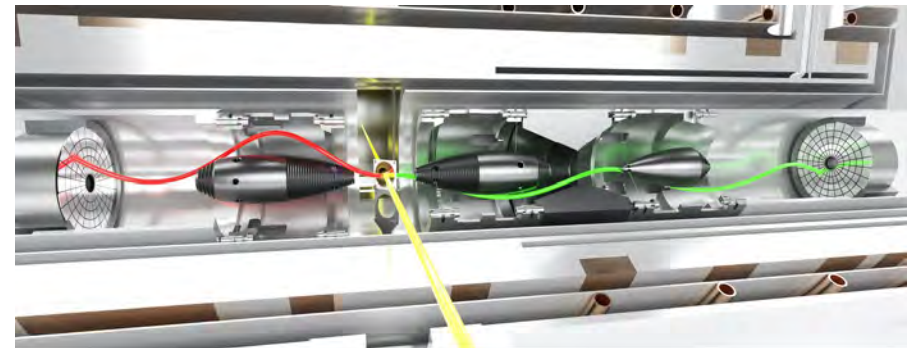
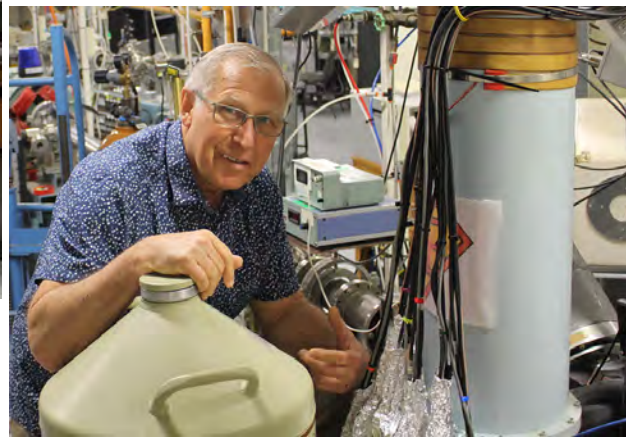


${}^7\text{Li}(p,\gamma){}^8\text{Be}^*$
@1.1 MeV

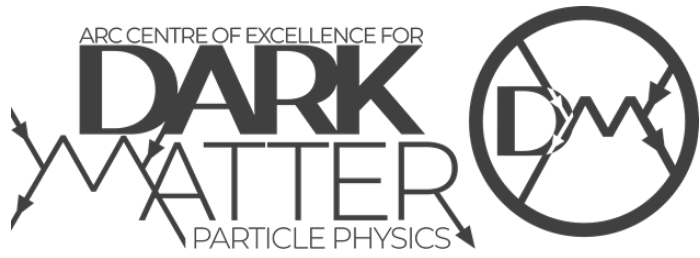
ATOMKI: A.
Krasznahorkay, PRL
116 (2016) 042501



Tibor Kibédi



* This project is currently outside the Centre



INTERNATIONAL PARTNER ORGANISATIONS:



The University of Sheffield.

