Tom Calverley

Dual-doctorate Candidate | Experimental Nuclear Physics

29 November 1990

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About me

I'm a final year dual-doctorate PhD candidate with a 1st class master's degree in physics (with honours) from the University of Liverpool. I'm a reliable and hard-working individual who is not shy of responsibility or new situations; I draw on my vast pool of knowledge and experiences to adapt to them in a proactive way. I can learn and apply complex concepts quickly, and have experience communicating technical details at varying levels.

Skills*

- Self-directed Research
- Programming (incl. OOP)
- Data Analysis
- Mathematics
- Scientific Writing
- Teaching & Communicating
- Presenting

Programming languages, frameworks, and skills:

· Java · C++ · Bash · LaTeX · Git · Python · Matlab · NumPy · Matplotlib · Pandas · PHP · mySQL · HTML · Javascript · CSS · Sass · Inkscape · Blender · MS Office Suite

Education‡

Since 2018 CMI L5 Diploma - Management and Leadership — Remote
Distance Learning College

Since 2015 PhD candidate - Experimental Nuclear Physics — England & Finland
University of Liverpool & University of Jyväskylä

Thesis - Combined in-beam Conversion Electron and γ-ray Spectroscopy of ^{250}Fm

2010-2015 Master of Physics with Honours (1st class) — England
University of Liverpool

Dissertation - A quantitative Analysis of Image Quality Matrics: A framework for a comparative study of the ProSPECTus compton camera and an infinia hawkeye SPECT/CT device

2007-2009 AS/A Levels — Wales
Yale College

Mathematics[A-Level], Physics[A-Level], ICT[A-Level], Chemistry[AS-Level]

2001-2006 GCSE's — Wales
Ysgol Clywedog

12 GCSE's A-C, including Mathematics, English, and Science*

Publications/ Conference Proceedings

MAR 2017 51st Annual Meeting of the Finnish Physical Society *[Author]*
"Combined conversion electron and γ-ray spectroscopy of ^{250}Fm"

JUL 2018 Phys. Rev. Lett. *[Co-author]*
"Lifetime measurements of excited states in ^{172}Pt and the variation of quadrupole transition strength with angular momentum"

OCT 2018 Phys. Rev. C *[Co-author]*
"Evolution from γ-soft to stable triaxiality in ^{136}Nd as a prerequisite of chirality"

FEB 2019 Phys. Rev. C *[Co-author]*
"Production cross section and decay study of ^{243}Es and ^{249}Md"

FEB 2019 International Conference on Proton-Emitting Nuclei *[Co-author]*
"Decay spectroscopy of the Proton Rich Isotopes ^{176,177}Tl"

JUL 2019 Phys. Rev. C *[Co-author]*
"α-spectroscopy studies of the new nuclides ^{165}Pt and ^{170}Hg"

AUG 2019 Phys. Rev. C *[Co-author]*
"Chirality of ^{135}Nd reexamined: Evidence for multiple chiral doublet bands"

NOV 2019 Phys. Lett. B *[Co-author]*
"Lifetime measurements of excited states in 163W and the implications for the anomalous B (E2) ratios in transitional nuclei"

NOV 2019 Phys. Rev. C *[Co-author]*
"Highly deformed bands in Nd nuclei: New results and consistent interpretation within the cranked Nilsson-Strutinsky formalism"

JAN 2020 Eur. Phys. J. A *[Co-author]*
"Evidence for Octupole Collectivity in 172Pt"

Experience

Since 2015 Experimental Nuclear Physics PhD — Universities of Liverpool & Jyväskylä
My PhD studies have provided a platform to develop and hone a plethora of highly-transferable soft and hard skills. I spent a significant proportion of my studies at the international accelerator laboratory in Jyväskylä, central Finland.

PTO ...

This provided a great deal of diversity in day-to-day working by requiring: a good understanding of theoretical frameworks, programming proficiency, an analytical and logical mindset, practical skills in both the analogue and digital domains, effective time management and self motivation, and the ability to communicate across disciplines and levels of knowledge.

My PhD is funded by a Graduate Teaching Assistant scholarship (GTA). Consequently, I have gained valuable experience in teaching and communication. This has taught me the ability to explain complex problems at varying levels, and to gauge the understanding of the audience/ learner. This ability was especially useful during some public open days, both in England and Finland, where I was tasked with explaining the complex physics undertaken at the university to prospective students and their parents, in a fun and engaging way.

2014 **Student Vacation Worker** University of Liverpool

I was employed by the department of physics during the summer break of my undergraduate studies in 2014. I worked alongside the AGATA collaboration (more than 350 scientists from 43 European institutes) in GANIL (Caen, France), where I carried out crucial tests and FPGA programming on the state-of-the-art digitiser network for the AGATA array.

I was also responsible for a number of customer acceptance tests (CAT) of the highly-segmented high-purity germanium AGATA crystals from the manufacturer. I also performed CAT on 65 bismuth germanium oxide (BGO) scintillator detectors for use in the Liverpool detector-scanning apparatus.

I took part in the International Festival for Business 2014. I presented a stand in the exhibition showcasing the novel gamma-ray spectroscopy detectors under development at the University of Liverpool to industry partners.

Interests

I enjoy photography, aviation, and hiking, and try to combine these interests when possible by visiting the esoteric 'Mach Loop'. I play bass, drums, and guitar, and have been in several bands in recent years - picking up my acoustic bass is a great way to unwind. I enjoy reading; I'm fond of science fiction and dystopian novels but enjoy non-fiction too. I'm a big fan of MotoGP and Formula 1, not only for the thrill of the racing, but also the impressive technology, R&D, and logistics necessary to make the entire thing possible.

References[†]

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Prof P.T. Greenlees
Head of Accelerator Laboratory
Fysiikan Laitos
Jyväskylän Yliopisto
Email: paul.greenlees@jyu.fi

(†) More available on request.
(‡) Those listed with 'Since yyyy' are ongoing. I.e. currently working towards the qualification.
(*) The skill scale is from 0 (Fundamental Awareness) to 6 (Expert).