

Christian de Podesta

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Graduate student in experimental physics with excellent analytical research skills, efficient evidence-based decision making, and a track record of effective teamwork. Strong verbal and written communications skills demonstrated by high-quality, peer-reviewed publications and prize-winning conference contributions, in addition to many years of teaching and science outreach for the general public. Based in London and available for work.

EDUCATION

PhD Experimental Condensed Matter Physics Cambridge, UK
University of Cambridge, Quantum Matter Group 2020-2024
Supervisor: Prof. F. M. Grosche

Synthesis and high-pressure studies of ferromagnetic metals and unconventional superconductors on the border of quantum phase transitions. Precision measurements in extreme conditions, such as pressures >10 GPa, temperatures <0.015 K, and magnetic fields >40 T.

- Designed and performed experiments and simulations to solve challenging research problems. Fitted and evaluated complex multivariate models to resolve unknown crystal structures and magnetic configurations in materials.
- Developed a novel optimisation technique for fitting crystal structure models to low-quality x-ray diffraction data.
- Managed experimental collaborations with tight deadlines at the Diamond Light Source Synchrotron (UK), Swiss Muon Source PSI (Switzerland), the US National MagLab (Tallahassee, FL), and High Magnetic Field Laboratory HFML (Netherlands).
- Awarded EPSRC and Cavendish scholarships, as well as successful applications for experimental and travel grants.

MSci Physics with First Class Honours Bristol, UK
University of Bristol 2016-2020
Design and characterisation of plasmonic nanoparticle devices (thesis commendation).

RELEVANT SKILLS

- Research**
- Fast-paced, evidence-based decision making, informed by critical analysis of data and context.
 - Leadership of teams delivering high-quality research output as part of international collaborations, within tight time and financial constraints.
 - Management of independent research projects, alongside pursuing long-term academic goals.
- Technical**
- Analysis, modelling and critical evaluation of large datasets, to identify trends and insights.
 - Solid foundation in mathematics and statistics.
- Computational**
- *Python* programming for data analysis, modelling and producing publication quality figures.
 - Proficient in *MS Office* (including *Excel*).
 - Quick to master new analysis techniques and software (MS, Linux, Mac).

RELEVANT SKILLS (CONTINUED)

- Communication**
- Published research outcomes in peer-reviewed journals, and contributed well-received oral and prize-winning poster presentations at international conferences.
 - Teaching and mentorship of students from high-level undergraduates to A-level and GCSE students.
 - Organised science communication and engagement activities at outreach events for schools and the general public.

PUBLICATIONS

1. O. P. Squire, S. A. Hodgson, J. Chen., V. Fedoseev, **C. K. de Podesta**, T. I. Weinberger, P. L. Alireza, and F. M. Grosche “Superconductivity beyond the conventional Pauli limit in high-pressure CeSb₂”. [Physical Review Letters](#), 131(2), 026001 (2023).
2. T. I. Weinberger, **C. K. de Podesta**, J. Chen, S. A. Hodgson, and F. M. Grosche, “Pressure-dependent structural and electronic instabilities in LaSb₂.” [SciPost Physics Proceedings](#) 11:018 (2023).
3. **C. K. de Podesta**, T. I. Weinberger, J. Chen, O. P. Squire, S. A. Hodgson, Z. Feng, T. Giles, P. Niklowitz, G. I. Lampronti, C. Beavers, and F. M. Grosche “High-pressure structural instability in CeSb₂”. (manuscript in preparation)
4. **C. K. de Podesta**, R. Khasanov, and F. M. Grosche, “Antiferromagnetic quantum phase transition in high-pressure CeSb₂”. (manuscript in preparation)

CONFERENCE CONTRIBUTIONS

- **Poster prize winner SCES conference 2022** (Amsterdam) in addition to poster presentation at SCES conference 2023 (Seoul).
- Oral presentation at DPG Condensed Matter March Meeting 2024 (Berlin).

COMMUNICATION AND OUTREACH EXPERIENCE

Physics Supervisor & Lab Demonstrator *University of Cambridge* 2020-2023
Taught weekly physics tutorials to groups at Trinity and Newnham colleges and mentored students through complex final-year lab practicals.

Cavendish ‘Physics at Work’ Event *University of Cambridge* 2023
Delivered short lectures with demonstrations on superconductivity for secondary schools, as part of a ‘Student Choice Award’ winning team.

Institute of Physics Campus Ambassador *University of Bristol* 2018-2020
Promoted physics engagement through outreach events at universities, schools, science fairs and music festivals.

PASS Leader *University of Bristol* 2018-2019
Led peer assisted study sessions (PASS) teaching undergraduate physics, maths and coding.

Temperature & Humidity Intern *National Physical Laboratory* 2018
Exhibited demonstrations to the general public explaining the SI base units and their redefinition at the Royal Society Summer Exhibition.

EXTRA-CURRICULARS

- In my spare time I build electric guitars and amplifiers by hand – then I play them.