



UNIVERSITY OF LEEDS

CANDIDATE BRIEF

**Research Fellow in Quantum Many-Body Physics,
Faculty of Engineering and Physical Sciences**



Salary: Grade 7 (£37,099 – £44,263 p.a.) Due to funding restrictions, an appointment will not be made higher than £39,347 p.a.

Reference: EPSPA1096

Closing date: Monday 08 January 2024

Fixed-term for 2 years

We are open to discussing flexible working arrangements

Research Fellow in Quantum Many-Body Physics, School of Physics and Astronomy.

Do you have a background in many-body quantum physics, tensor networks or topological phases of matter? Would you like to further your career in one of the UK's leading research-intensive universities?

Applications are invited to work on a project *New Paradigms of Order Amidst Quantum Chaos* funded by Leverhulme Trust. You will work within the [Theoretical Physics Group](#), in the School of Physics and Astronomy, as part of the research team of [Dr Zlatko Papić](#).

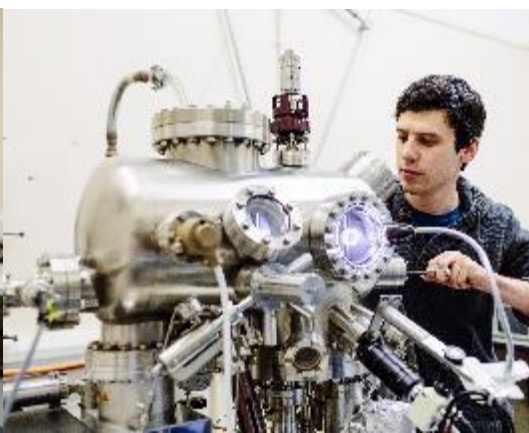
The project will involve the development of new theoretical and computational approaches to study dynamics of interacting quantum systems, in the context of condensed matter physics and ultracold atomic systems. Some of the focus areas of the project include classical and quantum simulations of many-body systems (in particular, matrix product states and tensor network methods), quantum ergodicity and its violations (e.g., quantum scars and many-body localisation), as well as topological phases of matter. The job will involve collaborations within the group, e.g., with the group of [Prof Pachos](#), as well as with our international collaborators.

You will have a PhD (or you will have submitted your thesis prior to taking up the appointment) in many-body quantum systems, broadly defined. You will also have experience in modelling, analysis and computational skills and evidence of contributing to papers in internationally recognised, peer-reviewed journals or evidence of publishable research in progress.

What does the role entail?

As a Research Fellow, your main duties will include:

- Contributing to the “New paradigms of order amidst quantum chaos” project, as directed by Dr Zlatko Papić;
- Generating and pursuing independent and original research ideas in the appropriate subject area;
- Developing research objectives and proposals and contributing to setting the direction of the research project and team including preparing proposals for funding in collaboration with colleagues;



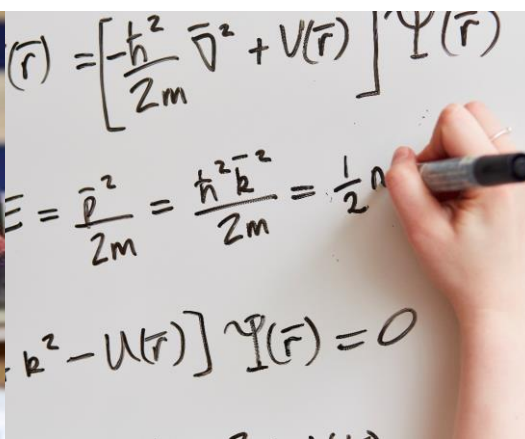
- Making a significant contribution to the dissemination of research results by publication in leading peer-reviewed journals and by presentation at national and international meetings;
- Working independently and as part of a larger team of researchers, both internally and externally, to develop new research links and collaborations and, engage in knowledge transfer activities where appropriate;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own research;
- Maintaining your own continuing professional development and acting as a mentor to less experienced colleagues as appropriate;
- Contributing to the training of both undergraduate and postgraduate students, including assisting with the supervision of projects in areas relevant to the project.

These duties provide a framework for the role and should not be regarded as a definitive list. Other reasonable duties may be required consistent with the grade of the post.

What will you bring to the role?

As a Research Fellow, you will have:

- A PhD (or have submitted your thesis before taking up the role) in Theoretical Physics or a closely allied discipline;
- A strong background in modelling, analysis and computational skills, in particular exact diagonalisation and tensor network methods;
- General knowledge of non-equilibrium physics, condensed matter theory and quantum information;
- Good time management and planning skills, with the ability to meet tight deadlines and manage competing demands effectively without close support;
- A developing track record of peer-reviewed publications in international journals;
- Excellent communication skills both written and verbal, and the ability to communicate your research at national and international conferences;
- A proven ability to work well both independently and in a team;
- A strong commitment to your own continuous professional development.



You may also have:

- Experience of pursuing external funding to support research.

How to apply

You can apply for this role online; more guidance can be found on our [How to Apply](#) information page. Applications should be submitted by **23.59** (UK time) on the advertised [closing date](#).

Contact information

To explore the post further or for any queries you may have, please contact:

[Dr Zlatko Papic](#), Associate Professor in Theoretical Physics

Tel: +44 (0)113 343 3882

Email: Z.Papic@leeds.ac.uk

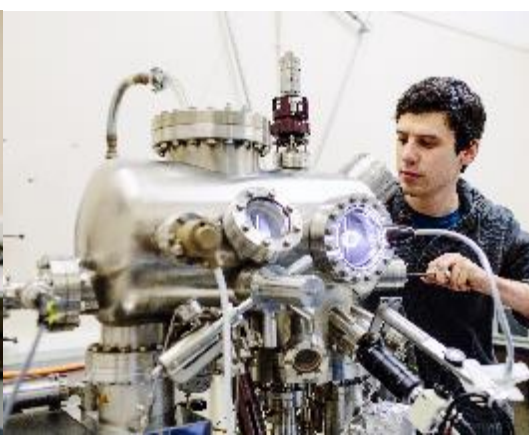
Additional information

Faculty and School Information

The project will be carried out at the [Theoretical Physics](#) group of the University of Leeds. Further information is available on the research and teaching activities of the [School of Physics and Astronomy](#) and the [Faculty of Engineering and Physical Sciences](#).

A diverse workforce

As an international research-intensive university, we welcome students and staff from all walks of life and from across the world. We foster an inclusive environment where all can flourish and prosper, and we are proud of our strong commitment to student education. Within the Faculty of Engineering and Physical Sciences we are dedicated to diversifying our community and we welcome the unique contributions that individuals can bring, and particularly encourage applications from, but not limited to Black, Asian and ethnically diverse people; people who identify as LGBT+; and people with disabilities. Candidates will always be selected based on merit and ability.



The Faculty of Engineering and Physical Sciences are proud to have been awarded the Athena SWAN [Silver](#) Award from the Equality Challenge Unit, the national body that promotes equality in the higher education sector. Our [equality and inclusion webpage](#) provides more information.

Working at Leeds

We are a campus-based community and regular interaction with campus is an expectation of all roles in line with academic and service needs and the requirements of the role. We are also open to discussing flexible working arrangements. To find out more about the benefits of working at the University and what it is like to live and work in the Leeds area visit our [Working at Leeds](#) information page.

Information for disabled candidates

Information for disabled candidates, impairments or health conditions, including requesting alternative formats, can be found on our [Accessibility](#) information page or by getting in touch with us at hr@leeds.ac.uk

Criminal record information

Rehabilitation of Offenders Act 1974

A criminal record check is not required for this position. However, all applicants will be required to declare if they have any 'unspent' criminal offences, including those pending.

Any offer of appointment will be in accordance with our Criminal Records policy. You can find out more about required checks and declarations in our [Criminal Records](#) information page.

