UNIVERSITY OF LEEDS

CANDIDATE BRIEF

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

Salary: Grade 7 (£33,797 – £40,322 p.a.) due to funding restrictions, an appointment will not be made above £38,017 p.a.

Reference: EPSPA1011

Closing date: 20 May 2020

Fixed-term for 2 years, with the possibility of extension.

We will consider flexible working arrangements

Research Fellow in Quantum Many-Body Physics.
School of Physics and Astronomy, Faculty of Engineering and Physical Sciences

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

An opportunity has arisen for a motivated researcher to work on a project *Quantum many-body scars* 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 Papic.

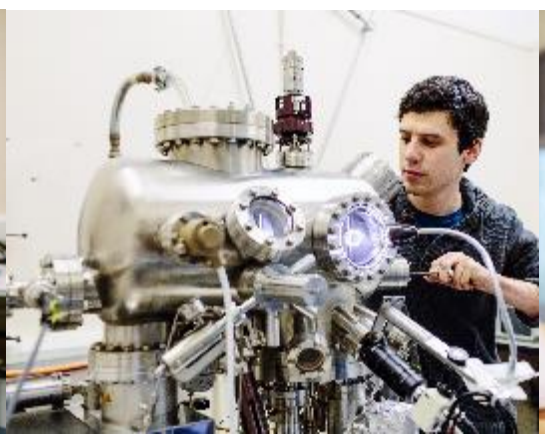
The project will involve the development of new theoretical and computational approaches to study dynamics of strongly interacting quantum systems, either in the context of condensed matter physics or ultracold atomic systems. The focus of the project is non-ergodic dynamics which leads to the phenomenon of quantum many-body scars, as well as related phenomena in the context of many-body localisation and topologically ordered systems (e.g., fractons). The job will involve collaborations within the group, e.g., with the group of Prof Pachos, as well as with many of 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 "Quantum many-body scars" project, as directed by Dr Zlatko Papic;
- 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;
- Evaluating methods and techniques used and results obtained by other researchers and to relate such evaluations appropriately to your own work;
- Preparing papers for publication in leading international journals and disseminating research results through other recognised forms of output;
- Working both independently and also as part of a larger team of researchers, engaging in knowledge-transfer activities where appropriate and feasible;
- 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.

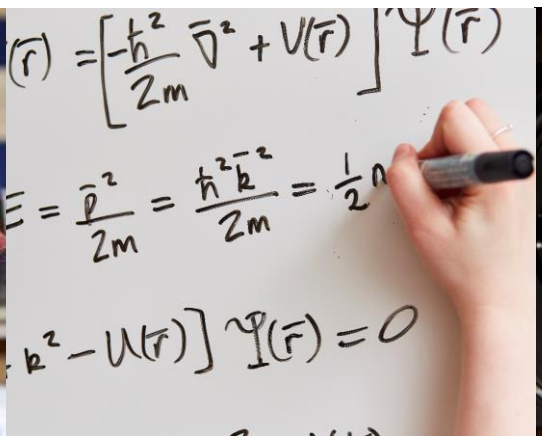
What will you bring to the role?

As a Research Fellow you will have:

- A PhD in Theoretical Physics or a closely allied discipline;
- A strong background in in modelling, analysis and computational skills;
- General knowledge of non-equilibrium physics (in particular, quantum thermalisation and many-body localisation) and topological phases of matter;
- Good time management and planning skills, with the ability to meet tight deadlines, manage competing demands and work effectively under pressure without close support;
- A proven track record of peer-reviewed publications in high impact factor journals;
- Excellent written and verbal communication skills including presentation skills;
- A proven ability to work well both individually 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

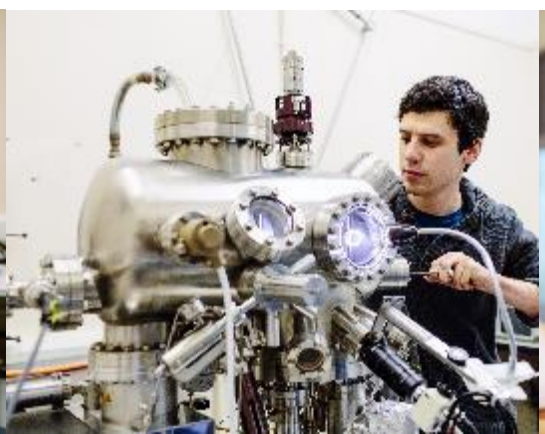
Faculty and School Information
The project will be carried out at the Theoretical Physics group of the University of Leeds and it is associated with the Leverhulme Trust award on “Quantum many-body scars”. Further information is available on the research and teaching activities of the School of Physics and Astronomy.

A diverse workforce

The Schools in the Faculty of Engineering & Physical Sciences are proud to have been awarded the Athena SWAN Bronze or 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
Find out more about the benefits of working at the University and what it is like to live and work in the Leeds area on our Working at Leeds information page.

Candidates with disabilities
Information for candidates with disabilities, impairments or health conditions, including requesting alternative formats, can be found on our Accessibility information page or by getting in touch with us at disclosure@leeds.ac.uk.


Criminal record information

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.