

Job Description: Postdoc position

## **Quantum Glass Transitions**

Physics, mathematics, computer science, biology, chemistry or related field (m/f/d)

**Start date:**

December 1, 2023 or later

**Duration:**

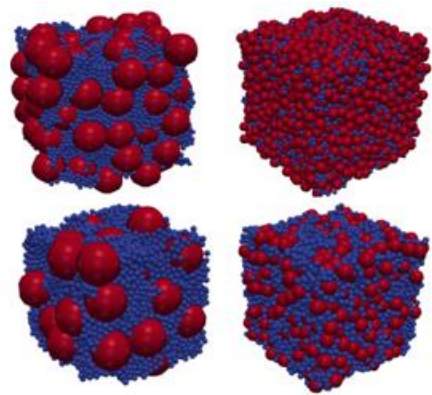
3 years

**Compensation:**

Up to pay grade 13 TVöD

**Employment:**

full time (part-time possible)



**Your mission:**

The Institute of Materials Physics in Space is one of the leading institutes worldwide in the exploration of fundamental physical properties and the solidification of metallic liquids, soft matter, and granular systems. In addition to experimental work in the laboratory and in microgravity, the institute works on computer simulations and theory to understand the physical phenomena that occur.

The Quantum Computer Initiative is a major project of the German Aerospace Center in the development and use of quantum computers. In the field of materials physics, the initiative aims to lay the foundations for the future effective use of quantum hardware and corresponding algorithms.

Quantum glass states should be useful for the development of novel materials (amorphous solids) as well as for the development of effective optimization methods (energy landscapes). For this purpose, established tools in the classical theory of condensed matter, e.g. mode-coupling theory (MCT) are to be extended to quantum phenomena, in particular for the calculation of glassy states and dynamics.



As part of the project you will be responsible for the following tasks:

- Analytical and numerical calculations to extend the theory of condensed matter to the quantum domain
- Development of quantum computing algorithms suitable for condensed matter problems
- Publication of results in scientific journals and presentations at international scientific conferences

**Your qualifications:**

- Degree in physics, chemistry, computer science, mathematics, or biology
- Good analytical and programming skills
- Good English language skills
- Preferably research experience in the field of condensed matter theory

**Your start:**

Look forward to an employer who values your commitment and promotes your development through diverse qualification and further training opportunities. Our unique working environment offers you creative freedom and an unparalleled infrastructure in which you can achieve your mission. Work-life balance, family and career compatibility, as well as equal opportunities for people of all genders (m/f/d), are important components of our personnel policy. We give preference to applications from qualified disabled individuals.

**Contact Person:**

Prof. Dr. Matthias Sperl, [matthias.sperl@dlr.de](mailto:matthias.sperl@dlr.de)

**Reference number:** 85284

**Online Application Form:**

[https://www.dlr.de/dlr/jobs/en/desktopdefault.aspx/tabid-10596/1003\\_read-51811/](https://www.dlr.de/dlr/jobs/en/desktopdefault.aspx/tabid-10596/1003_read-51811/)