

Post-doc position in the ILL Theory Group

A post-doc position is currently opened in the Institut Laue Langevin Theory Group (Grenoble, France). The Institut Laue Langevin is the European neutron source. The ILL theory group thus work in close collaboration with the ILL experimentalists and the ILL users.

Electronic structure and magnetism

The position is to work on ab-initio electronic structure and spectroscopic calculations in strongly correlated systems with a special focus in magnetic and multiferroic systems.

According to his/her abilities and taste the successful candidate will either work on specific compounds, in close collaboration with experimentalists, or on methodological developments in close collaboration with the scientific computing group.

In the first case the candidate will use ab-initio methods to develop effective models able to bring a coherent understanding of the experimentally-observed properties of specific compounds. A special focus will be given to the understanding of neutron diffraction data, such as magnetic structure, magnetic excitations, etc.

In the second case the candidate will rather focus on developing methods in order to better reach the prediction of excitation spectra, in particular magnetic ones. It could mean work on developing ab-initio methods, developing artificial intelligent replacement to the ab-initio calculations, developing the concepts and methodology to compute specific properties, etc.

The successful candidate should have a PhD in condensed matter Physics or quantum chemistry, a strong background in quantum mechanics, a reasonable knowledge of electronic structure calculations (such as DFT, wave-function methods, etc) and be reasonably computer learned (Linux, programming language). Some knowledge in group theory or crystallography will be appreciated. Similarly knowledge in modern parallelization and programming/versioning methods (MPI, OpenMP, OpenACC, Git, etc.) will be a plus.

The position is to work under the supervision of Prof. MB Lepetit.

Applications are to be send to lepetit@ill.fr prior March 31st 2023. After a prescreening of the candidates, the selected ones will be invited for an interview (including a talk on their previous work and questions from the panel).