PostDoc at Sorbonne University in theoretical spectroscopies for strongly correlated materials

Starting from 1 September 2023, a 1-year postdoctoral position is available in the Quantum Theory of Matter (TQM) group at the IMPMC of Sorbonne University (Paris, France).

We look for highly motivated candidates with a PhD degree in condensed matter physics, material science or a related domain with a strong interest in physics. The successful candidate will have a solid background in solid state physics, advanced quantum mechanics and statistical physics and basic knowledge of theoretical spectroscopies. She/he should have skills in at least one programming language (Fortran, C/C++, Julia, Python) and Linux. Prior experience with the development of many-body techniques for the simulation of electronic or magnetic properties of strongly correlated systems such as DMRG, MPS-based techniques, quantum Monte Carlo or Green's function based techniques like dynamical mean-field theory as well as proficiency in high-performance computing will be advantageous.

The hired candidate will work with Benjamin Lenz on the development of a technique for the *ab initio* calculation of the cross section of core-level spectroscopies for correlated materials. In the framework of this research project, he/she will implement a very recently developed computational scheme around the so-called band-Lanczos technique to simulate x-ray absorption spectroscopy and resonant inelastic x-ray scattering. In collaboration with experimental colleagues, the tools developed will be used to model experimental data of cuprate oxychlorides.

The postdoc will work in the Quantum Theory of Matter (TQM) group, a young and dynamic theory group with a strong background in the development of new many-body methods from first principles. It is part of the multidisciplinary IMPMC institute, located at the lively Pierre and Marie Curie campus of Sorbonne University.

Screening of applicants will start immediately and last at least until 15 June 2023. For more information and in order to apply, please consult the corresponding job announcement on the CNRS job portal (https://emploi.cnrs.fr/Offres/CDD/UMR7590-BENLEN-001/Default.aspx?lang=EN). Questions can be addressed by email to Benjamin Lenz (benjamin.lenz[at]sorbonne-universite.fr).