CEA Tenured position as a researcher in theoretical physics of complex quantum systems

The Quantum Photonics, Electronics and Engineering Laboratory (PHELIQS), a joint research unit of the CEA Fundamental Research Division in Grenoble and Université Grenoble Alpes in experimental and theoretical condensed matter physics, is hiring a quantum theoretical physicist. PHELIQS and its partners are currently developing a large panel of experimental approaches for quantum technologies, including semiconductor-based quantum bits, superconducting hybrid devices, quantum photonic circuits, 2D materials for quantum nanoelectronics, and more. The theory group of PHELIQS uses a wide spectrum of methods, both analytical and numerical, to elucidate the underlying physics of these systems. Interests in the group include topological materials, superconducting circuits, frustrated spin systems, unconventional superconductivity, computational quantum transport (development of the Kwant software http://kwant-project.org), tensor network and diagrammatic quantum Monte-Carlo techniques.

The development of quantum technologies is now a highly supported topic, not only at the national level with the recent “French plan quantique”, for example, but also with European initiatives as the quantum Flagship. In that context, the CEA Grenoble with its partner CNRS/Institut Néel is currently setting up a large research project to develop quantum devices and integrate them into a larger scale quantum computer. To accompany these developments, we are looking for a theoretical physicist with a good understanding of (correlated) quantum nanoelectronics, together with a strong interest in quantum computing. The opening is for a permanent, full-time CEA research position. The candidate will lead a research program at the crossroad of solid-state quantum devices and quantum information machines. Collaborations with experimentalists and other theorists in this context will be strongly encouraged, especially within CEA programs.

Located in the French Alps and surrounded by a stunning natural environment, the international city of Grenoble hosts a rich scientific ecosystem formed by public research organizations (CEA, CNRS, ESRF, ILL) and high-tech companies. Université Grenoble Alpes attracts a large number of students in a broad range of disciplines, including quantum nanoelectronics and its recently established quantum engineering program.

CEA is a French public research organization that stands at the crossroad between basic fundamental research and applied research. Pheliqs is one of the 10 laboratories of the CEA Interdisciplinary Research Institute of Grenoble (CEA/IRIG - https://www.cea.fr/drf/irig/english) from the CEA Fundamental Research Division, which conducts research in biology, health, nanosciences, physics, cryotechnologies, and new technologies for energy and the environment.

Qualifications

Applicants shall have a PhD in theoretical condensed matter physics or a related discipline, and at least 3 years of experience after the PhD, and are expected to hold an outstanding research track record. A background in quantum nanoelectronics and/or many-body physics with interests in quantum information will be highly appreciated.

How to apply

Applicants shall send a cover letter indicating their interest and fit with the position, a curriculum vitae, a track record of past research (2 pages max explaining the applicant’s chief achievements, plus a list of publications), and a research statement (2 pages max explaining current and future research interests) to Xavier Waintal (xavier.waintal@cea.fr). In addition, they should arrange for three letters of recommendation to be sent to the same address. To ensure full consideration, **applications should be received by April 16th, 2021**.

Selected candidates will be interviewed by a committee of experts in May/June 2021.