POSTDOCTORAL FELLOWSHIP IN MATHEMATICS OF QUANTUM MANY-BODY PROBLEMS AND

Company Description

BCAM is the Research Center on Applied Mathematics created with the support of the Basque Government and the University of the Basque Country, which aims to strengthen the Basque science and technology system, by performing interdisciplinary research in the frontiers of mathematics, talented scientists' training and attraction, so the excellence of our results are recognized by the Society

Information

Deadline: 2023-10-01
Category: Business
Province: Bizkaia
Country: Basque Country
City: Bilbao

Company

BCAM

Main functions, requisites & benefits

Main functions

Basque Center for Applied Mathematics – BCAM is offering a postdoctoral position in mathematics of quantum many-body problems and quantum information science to work with Jean-Bernard Bru and Mikel Sanz in Quantum Mechanics research line. The research will work on Mathematics of Quantum Many-Body Problems and Quantum Information Science.

Requisites

Requirements: Promising young researchers. Applicants must have completed their PhD before the contract starts. The post holder will not be required to do any teaching but if desired he/she can deliver short courses, of his/her choice, at Ph.D. level. Also, if desired, he/she can be involved in the supervision of graduate/master students. Involvement in dissemination and the organization of scientific events is desirable. The candidates, especially if they are senior, should be prepared to apply for some research grant/position or project such as Juan de la Cierva, ERC starting grant, or postdoctoral fellowships within the Marie Skłodowska-Curie Actions. Skills: Good interpersonal skills. A proven track record in quality research, as evidenced by research publications in top scientific journals and conferences. Demonstrated ability to work independently and as part of a collaborative research team. Ability to present and publish research outcomes in spoken (talks) and written (papers) form. Ability to effectively communicate and present research ideas to researchers and stakeholders with different backgrounds. Fluency in spoken and written English The preferred candidate will have one of these two scientific backgrounds: Research experience and interest in mathematical studies of quantum many-body problems (fermionic and bosonic cases). Knowledge of functional and convex analysis, operator algebra and quantum statistical mechanics. Note that a very good knowledge of the C^*-algebra approach to quantum statistical mechanics (CAR and CCR algebras) would be in particular strongly appreciated. Background in mathematical aspects of MPS and tensor networks and quantum channels/CPTP maps, functional analysis, matrix analysis, and similar. Otherwise, experience in quantum algorithms especially for the simulation of manybody systems in NISQ devices and quantum complexity theory.

Benefits

The gross annual salary of the Fellowship will be 29.120€ - 35.360€ according to experience. It will then be on your own responsibility to make your yearly income declaration at the Bizkaia Treasury Agency. Additionally, we offer a moving allowance up to 2.000€. Should the researcher have a family at the time of recruitment: 2.000€ gross in a single payment will be offered (you must be married-official register or with children and the certificate to prove it must be sent). 1.200€ gross per year/per child (up to 2 children) will be offered (the certificate to prove it must be sent). Free access to the Public Health System in Spain is provided to all employees.