“Anyons on demand” (18 months (extendable) funded contract – ANR FullyQuantum 2018):

Nanoelectronics Group, at CEA Saclay, Université PARIS-SACLAY (France)

Anyons, in their non-abelian form, are expected to enable topological quantum computation. However, no direct convincing experimental evidence of anyons, even abelian, is available to date, calling for new approaches.

The Nanoelectronics Group is looking for excellent and highly motivated candidate for a Post-Doctoral Position on our experiment on **quantum Anyonic statistics** with fractionally charged Levitons in the Fractional Quantum Hall Effect regime.

The candidate will lead a presently running experiment on the project on abelian and non-abelian statistics using on-demand anyon sources based on levitons in the FQHE regime. Through electronic Hong Ou Mandel interferences, the time control would permit an unprecedented measurement of the **quantum statistical angle** of e/3 or e/5 abelian anyons or e/4 non-abelian anyons.

Skills in nanofabrication, microwaves and low temperature techniques are highly appreciated.

References:

- *A Josephson relation for fractionally charged anyons*, **Science 363, pp. 846-849 (2019) DOI: 10.1126/science.aau3539**
- *Minimal-excitation states for electron quantum optics using levitons***, Nature 502, 659–663 (2013)** dx.doi.org/10.1038/nature12713
- *Quantum Tomography of an electron***, Nature 514, 603–607 (2014)** DOI: 10.1038/nature13821
- *Levitons for electron quantum optics*, D.C. Glattli, P. Roulleau, Phys. Status Solidi B 254, No. 3, 1600650 (2017**).**

How to apply:

Candidates are requested to send the following documents by mail to Christian Glattli (christian.glattli@cea.fr):
- Detailed CV (pdf)
- Motivation letter (pdf)
- Candidates are kindly requested to ask to at least two reference researchers to send recommendation letters directly to Christian Glattli.
- deadline for application: 2019 July 31.