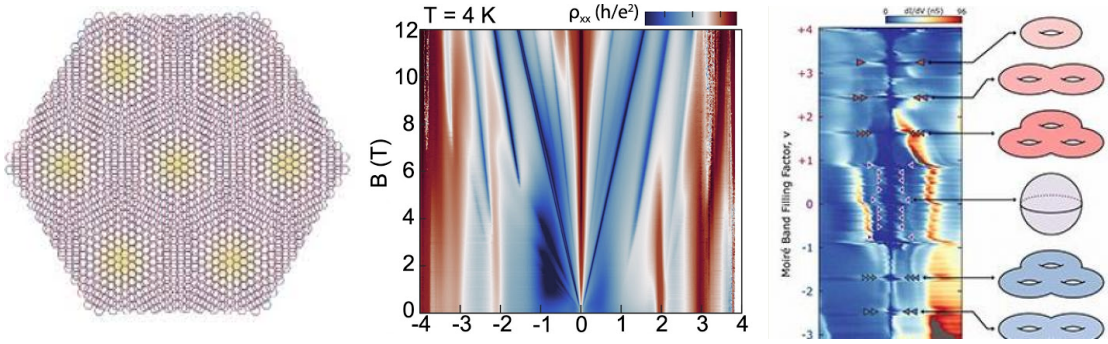
Laboratory of Quantum Physics: Topology and Correlations

Postdoctoral Position focusing on correlated states in moiré superlattice structures

A postdoc position is available at the Laboratory of Quantum Physics, Topology and Correlations at EPFL (Lausanne, Switzerland) headed by Prof. Mitali Banerjee. The positions are related to quantum transport in 2D materials and is funded by recently awarded the prestigious SNF Eccellenza grant. The initial contract is for one year, renewable for up to a total of three years.

Our group has at its disposal two van der Waals transfer assemblies, one of them is fully automatic and functional inside a glovebox, one high-resolution optical microscope, a He3 and VTI wet Oxford cryostats with 12 T magnet also a 5mK dilution refrigerator from Leiden cryogenics with 16T magnet. We are expecting a high-end AFM and a 7mK dry dilution with 9-1-1 axis magnet to be delivered by the third quarter of the year. We fabricate mesoscopic devices in the state-of-the-art 1500sq m EPFL class 100 cleanroom (cmi.epfl.ch).



The projects involve nanofabrication of devices in van der Waal materials heterostructures, low temperature electrical measurements of conductance, thermal noise etc., data analysis and extensive interactions with other researchers. Aim of project is to study strongly correlated states of matter in moiré supurlattice of homo or hetero bilayers, with a focus on Chern insulator and ferromagnetism.

Candidate with PhD in Physics or Materials Science with background in low temperature quantum transport measurements and nanofabrication and working experience of van der Waals heterostructure is a plus point though not necessary.

Start date: No later than September 1st, 2021

EPFL offers internationally competitive salaries (min. 83'600 CHF/year), generous research support and outstanding research infrastructure. Academics in Switzerland enjoy many research funding opportunities, as well as an exceptionally high standard of living.

Applications should be submitted to Prof. Mitali Banerjee (mitali.banerjee@epfl.ch) **in a single PDF file: containing a resume and publication list, a motivation letter, transcripts of undergraduate and graduate studies**. Letters of recommendations are to be sent by 2 referees directly to Prof. Banerjee.

Figure ref: Left: Nature **556**, 80 (2018). Center: Nat. Phys https://doi.org/10.1038/s41567-020-01129-4 (2021). Right: Nature **588**, 610 (2020).