

THE BATSHEVA DE ROTHSCHILD SEMINAR ON TOPOLOGY MEETS DISORDER AND INTERACTIONS: PRESENT CHALLENGES, FUTURE PROMISES 27-31 MAY, 2018

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## Transport through a network of topological states in twisted bilayer graphene

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Minimally twisted bilayer graphene exhibits a lattice of AB and BA stacked regions. At small carrier densities and large displacement field, topological channels emerge and form a network. We fabricate small-angle twisted bilayer graphene and tune it with local gates. In our transport measurements we observe Fabry-Perot and Aharanov-Bohm oscillations which are robust in magnetic fields ranging from 0 to 8 T. The Fabry-Perot trajectories in the bulk of the system cannot be bent by the Lorentz force. By extracting the enclosed length and area we find that the major contribution originates from trajecto- ries encircling one row of AB/BA regions. The robustness in magnetic field and the linear spacing in density testifies to the fact that charge carriers flow in one-dimensional, topologically protected channels.