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Experimental studies of the transport in graphene in a parallel magnetic field at low temperatures[1] LIYUAN ZHANG, JORGE CAMACHO, Brookhaven National Laboratory, HELIN CAO, ISAAC CHILDRES, YONG CHEN, Purdue University, ALEXEI TSVELIK, DMITRI KHARZEEV, MAXIM KHODAS, MYRON STRONGIN, TONICA VALLA, IGOR ZALIZNYAK, Brookhaven National Laboratory, BROOKHAVEN NATIONAL LABORATORY COLLABORATION, PURDUE UNIVERSITY COLLABORATION — Graphene has remarkable electric properties, and it is also a very promising material for spintronic applications. Most previous experiments, however, were focused on studying graphene devices in perpendicular magnetic field, which quantizes the real-space motion of Dirac electrons in graphene and leads to an unusual quantum Hall effect. Here we will present the results of experimental studies of electric transport in single- and few-layer graphene devices in parallel magnetic field and at low temperatures. The Dirac-point resistance of our graphene devices was studied as a function of magnetic field and temperature. The effect of tuning the chemical potential under different magnetic fields was also investigated and will be discussed.

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