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Ballistic transport in CVD graphene V.E. CALADO[1], Kavli Institute of Nanoscience, University of Technology Delft, S.E. ZHU[2], Micro and Nano Engineering Laboratory, Precision and Microsystems Engineering, University of Technology Delft, S. GOSWAMI, Q. XU, Kavli Institute of Nanoscience, University of Technology Delft, K. WATENABE, T. TANIGUCHI, Advanced Materials Laboratory, National Institute for Materials Science, Tsukuba, G.C.A.M. JANSSEN, Micro and Nano Engineering Laboratory, Precision and Microsystems Engineering, University of Technology Delft, L.M.K. VANDERSYPEN, Kavli Institute of Nanoscience, University of Technology Delft — Chemical vapor deposition (CVD) synthesis of graphene is a scalable and controllable method for the production of single layer CVD graphene (CVDg). Up to now its electronic and structural quality is considered to be inferior to exfoliated graphene, and in particular no ballistic phenomena have been observed in CVDg. Here we synthesize and measure CVDg that shows ballistic transport on a micron length-scale at 4 K. With a dry transfer method we transferred 100 μm size single crystals of CVDg onto hexagonal boron nitride. Using non-local measurements we show that electrons can be ballistically directed by a magnetic field (transverse magnetic focussing) over length scales of about 1 micron. These findings suggest that CVD graphene is suitable for electron optics experiments.

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