

Supplementary Information

for

Signatures of single quantum dots in graphene nanoribbons within the quantum Hall regime

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1 Device geometry

The nanoribbons were fabricated by depositing a graphene flake over a bottom gate structure, then etching longitudinal edges and a hole in the center of the flake using reactive ion etching, before suspension. Fig. S1 shows an SEM image of a final double-ribbon structure. Two bottom gates - situated below the suspended branches and contacts - are schematically drawn in yellow. Conductance measurements as a function of the two gate voltages revealed that one branch was often dead in such devices. All measurements were performed in junctions with only one conducting branch.

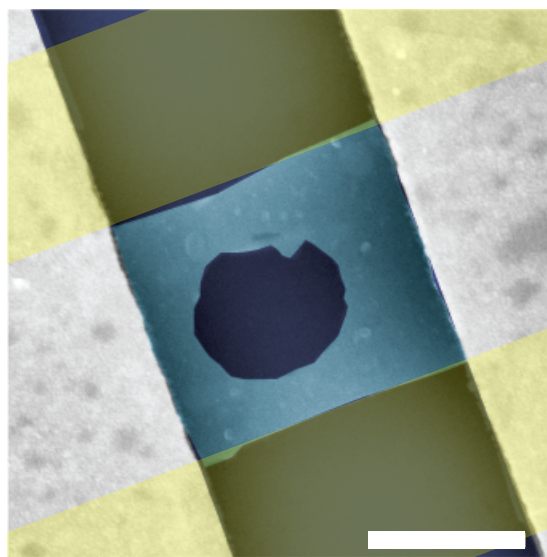


Figure S1: SEM image of a flake with a hole etched in the middle, from Ref. S 1. Bottom gates are drawn in yellow. Scale bar is 500 nm.

2 Coulomb diamonds on R1

$V_{SD} - V_g$ measurements at constant magnetic fields have also been performed on R1. Fig. S2 depicts Coulomb-diamonds at 4 T, belonging to conductance fluctuations near the gap edge.

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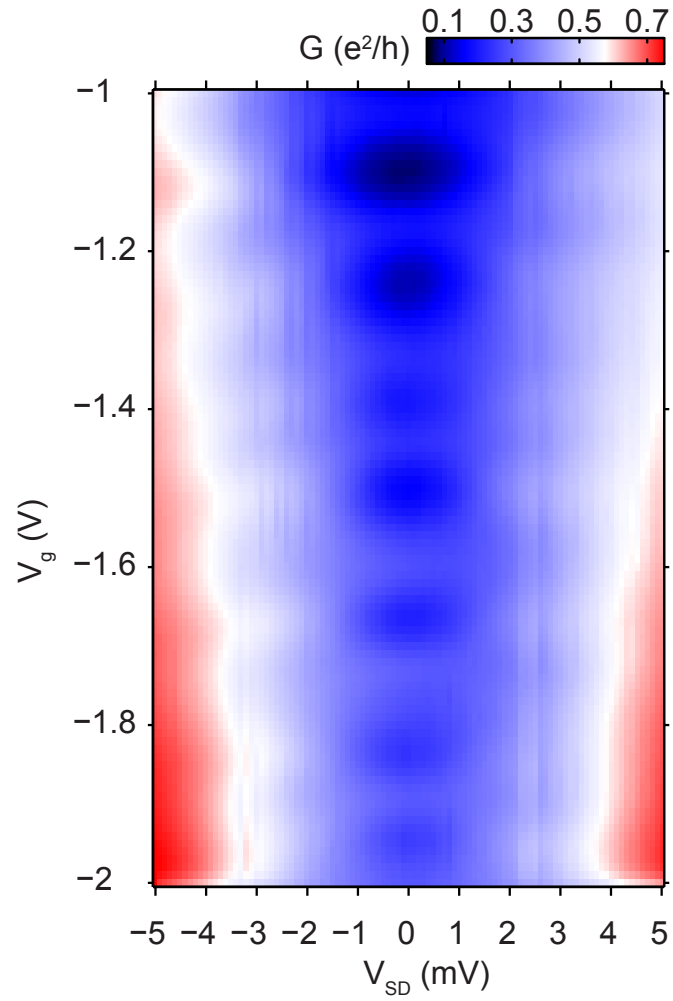


Figure S2: Conductance G of ribbon R1 at 4 T as a function of bias voltage V_{SD} and gate voltage V_g , exhibiting Coulomb-diamonds.

References

- [1] R. Maurand, P. Rickhaus, P. Makk, S. Hess, E. Tovari, C. Handschin, M. Weiss and C. Schönenberger, *Carbon*, 2014, **79**, 486–492.