

Supplementary information for
Gate tuneable beamsplitter in ballistic graphene

Peter Rickhaus,¹ Péter Makk,¹ Ming-Hao Liu,²

Klaus Richter,² and Christian Schönenberger¹

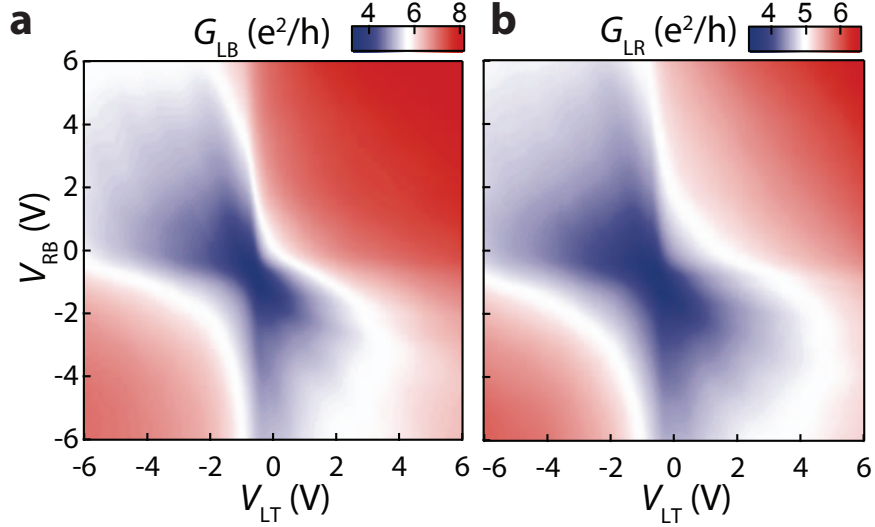
¹*Department of Physics, University of Basel,
Klingelbergstrasse 82, CH-4056 Basel, Switzerland*

²*Institut für Theoretische Physik, Universität Regensburg, D-93040 Regensburg, Germany*

(Dated: July 31, 2015)

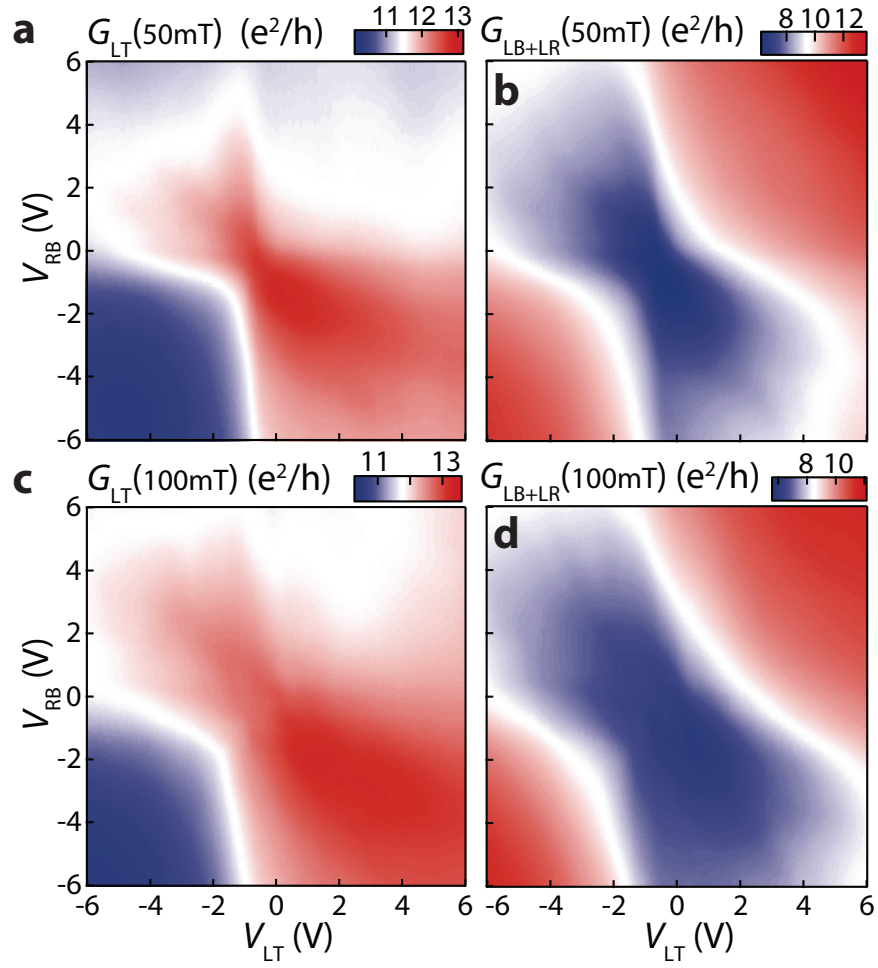
DETAILED MAPS

In SFig. 1a) and b) the conductance $G_{LB}(V_{LT}, V_{RB})$ and $G_{LR}(V_{LT}, V_{RB})$ are given, respectively. The conductance for L to B is higher than L to T in the p-n regime. This can result from more trajectories from L to B than L to R, which have close to perpendicular incidence at the p-n interface. Another reason can be negative refraction, which also bends to trajectories towards the bottom contact.



Supporting Figure 1. **a**, $G_{LB}(V_{LT}, V_{RB})$, when the current is injected from the L contact. **b**, $G_{LR}(V_{LT}, V_{RB})$.

In SFig. 1a) and b) the conductance $G_{LT}(V_{LT}, V_{RB})$ and $G_{LB+LR}(V_{LT}, V_{RB})$ are given, respectively at 50 mT. Similarly, SFig. 1c) and d) shows the conductance maps at 100 mT.



Supporting Figure 2. **a**, $G_{LT}(V_{LT}, V_{RB})$ at 50 mT. **b**, $G_{LB+LR}(V_{LT}, V_{RB})$ at 50 mT. **c**, $G_{LT}(V_{LT}, V_{RB})$ at 100 mT. **d**, $G_{LB+LR}(V_{LT}, V_{RB})$ at 100 mT.