

Title : Heat Coulomb blockade of one ballistic channel

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Quantum mechanics and Coulomb interaction rule heat and charge transport in small circuits, giving rise to many-body phenomena (Coulomb blockade, Luttinger liquids, Kondo effect...). Whereas many experiments address electrical properties, consequences on thermal transport remain mostly unexplored.

In this presentation, I will show that the Coulomb interaction influence on heat transport can be drastically different from that on electrical transport, in violation of the Wiedemann Franz law (relating charge and thermal conductances). Using a hybrid metal-semiconductor circuit with N parallel ballistic channels connected to a floating node, we demonstrate the systematic blockade of exactly one thermal conductance quantum, whereas there is no such blockade on the electrical conductance [1].

[1] E. Sivre *et al.*, Nat. Phys. **14**, 145 (2018)