

Landauer-Büttiker currents and Thouless conductance

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Abstract: After a heuristic explanation of the notion of Thouless conductance of a finite sample, we shall explain how to extract a mathematically well defined mathematic quantity for it out of its heuristic definition, and relate it to the currents between electronic reservoirs through the sample as given by the Landauer-Büttiker formula, making precise the notion of so-called "optimal feeding". If time permits, we will also comment on how the behaviour of the Thouless conductance as the size of the sample grows can be viewed as a criterion for localization.