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Entanglement entropy in mesoscopic conductors[1] KONRAD THOMAS, CHRISTIAN FLINDT, Département de Physique Théorique, Université de Genève — The degree of entanglement in a many-body quantum system can be characterized by the entanglement entropy. We consider the entanglement entropy generated between two electronic reservoirs connected by a quantum point contact (QPC) [1,2]. The entanglement entropy is obtained from the fluctuations of the electric current which we evaluate numerically exact using a tight-binding model of the system [3]. Within our approach we can investigate the influence of time-dependent modulations, including the opening and closing of the QPC [4]. We focus on electronic conductors, but our ideas may also be realized in cold atomic gases.

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