

# Many-Body Entanglement: a New Application of the Full Counting Statistics

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Entanglement entropy is a measure of quantum correlations between separate parts of a many-body system, which plays an important role in many areas of physics. Here we review recent work in which a relation between this quantity and the Full Counting Statistics description of electron transport was established for noninteracting fermion systems. Using this relation, which is of a completely general character, we discuss how the entanglement entropy can be directly measured by detecting current fluctuations in a driven quantum system such as a quantum point contact.

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