Contribution ID: **205** Type: **Talk**

【257】Entanglement of Gaussian Fermionic States

Wednesday 23 August 2017 15:45 (15 minutes)

We consider Gaussian fermionic states and their entanglement properties. Among continuous variable systems Gaussian states stand out prominently, because of their simple and elegant mathematical description in terms of first and second order correlations. Moreover, the subclass of Gaussian fermionic states has the distinguished feature, that they can be mapped onto systems consisting of qubits via the so-called Jordan-Wigner transformation. We characterize possible transformations of (pure) single- and multimode states via Gaussian (fermionic) local operations assisted by classical communication. Thus, also the most useful states in this context, i.e. states in the maximally entangled set, are determined. Furthermore, their entanglement is quantified and qualified by computing operational entanglement measures.

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Session Classification: Theoretical Physics

Track Classification: Theoretical Physics