Contribution Title:	REDUCED AND PROJECTED TWO-PARTICLE ENTANGLEMENT AT FINITE TEMPERATURES
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We present a theory [1] for two-particle entanglement production and detection in mesoscopic conductors at finite temperature. In contrast to the zero temperature limit, the entanglement of the density matrix projected out of the emitted many-body state is different from the entanglement of the reduced density matrix, detectable by current correlation measurements. We show that under very general conditions the reduced entanglement constitutes a lower bound for the projected entanglement. Applying the theory to the recent experiment [2] on a fermionic Hanbury Brown Twiss two-particle interferometer [3] we find that despite an appreciable entanglement production in the experiment, the detectable entanglement is close to zero.

[1] P. Samuelsson, I. Neder, M. Büttiker, Phys. Rev. Lett. Phys. Rev. Lett. 102, 106804 (2009).
[2] I. Neder, N. Ofek, Y. Chung, M. Heiblum, D. Mahalu, V. Umansky, Nature 448 333 (2007).
[3] P. Samuelsson, E.V. Sukhorukov, M. Büttiker, Phys. Rev. Lett. 92, 026805 (2004).