

Abstract Submitted
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On local temperatures near absolute zero in nonequilibrium quantum systems¹ ABHAY SHASTRY, University of Arizona, JUSTIN BERGFELD, Northwestern University, CHARLES STAFFORD, University of Arizona — The local temperature of a quantum conductor with source at finite temperature and drain at or near absolute zero is investigated, a problem outside the scope of linear response theory. The local temperature is defined by the measurement of a floating thermoelectric probe. It is shown that cold spots with local temperatures near absolute zero exist within the system, and the applicability of the third law of thermodynamics is investigated.

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