

Statistics of heat exchange between two resistors

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We study energy flow between two resistors coupled by an arbitrary linear and lossless electric circuit. We show that the fluctuations of energy transferred between the resistors are determined by random scattering of photons on an effective barrier with frequency dependent transmission probability $\tau(\omega)$. We express the latter in terms of the circuit parameters. Our results are valid in both quantum and classical regimes and for nonequilibrium electron distribution functions in the resistors. Our theory is in good agreement with recent experiment performed in the classical regime.