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Non-equilibrium Transport of Light CHIAO-HSUAN WANG, JQI/UMD/QuICS, JACOB TAYLOR, JQI/NIST/QuICS — Non-equilibrium Transport of Light The thermalization of light under conditions of parametric coupling to a bath provides a robust chemical potential for light [1]. We study non-equilibrium transport of light using non-equilibrium Green's function approach under the parametric coupling scheme, and explore a potential photonic analogue to the Landauer transport equation. Our results provide understandings of many-body states of photonic matter with chemical potential imbalances. The transport theory of light paves the way for quantum simulation and even practical applications of diode-like circuits using quantum photonic sources in the microwave and optical domain.
[1] M. Hafezi, P. Adhikari, J. M. Taylor, arXiv:1405.5821v2 (2014)

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