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Photon and dilepton production rate in the quark-gluon plasma from lattice QCD

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The photon emissivity of the quark-gluon plasma (QGP) is an important input to predict the photon yield in heavy-ion collisions, particularly for transverse momenta in the range of 1 to 2 GeV. Photon production in the QGP can be probed non-perturbatively in lattice QCD via (Euclidean) time-dependent correlators. Analyzing the spatially transverse channel, as well as the difference of the transverse and longitudinal channels as a consistency check, we determine the photon emissivity based on continuum-extrapolated correlators in two-flavour QCD. Estimates of the lepton-pair production rate can be derived by combining the two aforementioned channels.

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