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Finite temperature gluon spectral functions from twisted mass lattice QCD

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I will report on an attempt to fix the gluon spectral functions at finite temperature in Landau gauge. Our study used a novel Bayesiann approach for the extraction of non-positive definite spectral functions.
The spectral functions are extracted at three different lattice spacing.
For each of them, a scan of temperatures around the crossover transition is carried out.
There are indications for the existence of a well defined quasi-particle peak. Due to a relatively small number of imaginary frequencies available, we focus on the momentum and temperature dependence of the peak position while the width is beyond our present possibilities.
The dispersion relation reveals different in-medium masses for longitudinal and transversal gluons at high temperatures, in agreement with weak coupling expectations.

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