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Quarkonium in the QGP from $N_f = 2 + 1$ lattice QCD

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We present unquenched correlator data and corresponding reconstructed spectral functions for quarkonium in both pseudoscalar and vector channels. Correlators are obtained using clover-improved Wilson fermions on $N_f = 2 + 1$ HISQ lattices. To be on the constant line of physics bare quark masses are tuned to reproduce the mass spectrum of quarkonium by comparing the mass spectrum obtained from the lattice QCD with experimental values from the particle data group. For the spectral reconstruction, we use models based on perturbative spectral functions from different frequency regions like resummed thermal contributions around the threshold from pNRQCD and vacuum contributions well above the threshold. We show preliminary results of the reconstructed spectral function obtained for the first time in our study for full QCD. In addition, we compare the results with the previous continuum extrapolated results in the quenched approximation.

Experiment/Theory

Theory/Phenomenology

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