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Effects of bulk viscous medium: quarkonium spectral functions, $\psi'/J/\psi$ ratio and R_{AA}

Wednesday 1 December 2021 14:30 (20 minutes)

We will discuss the effects of bulk viscous quark gluon plasma medium on the quarkonium spectral functions. The bulk viscous correction is incorporated in the distribution functions of thermal quarks and gluons, with which we compute the dielectric permittivity. The modified dielectric permittivity is used to calculate the in-medium heavy quark potential. Using the modified heavy quark complex potential, we compute the quarkonium spectral functions by solving the Schr\"odinger equation. We fit the spectral functions with the skewed Breit-Wigner form and compute the physical properties of quarkonia such as masses, binding energies, decay widths and also the integrated area under the bound states peak. To discuss the physical implications of our results, we will show the effects of bulk viscous correction on the physical observables such as relative production yield $\psi'/J/\psi$ ratio and R_{AA} at the LHC energies.

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