Resonance studies at STAR

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Abstract

The measurements of the properties and yields of resonances produced in relativistic heavy ion collisions could indicate in-medium modifications of the mass and width and also signal the creation of new states of matter. We will report on the observed signals of $\rho \to \pi^+\pi^-(\Gamma \simeq 150MeV)$, $\bar{K^*} \to \pi^- K^+(\Gamma = 50MeV)$, $\Phi \to K^+K^-(\Gamma = 4.43MeV)$ using the mixed-event method with powerful statistics from the large acceptance and highly efficient STAR TPC. Preliminary results from the first observation of such states from the year-one STAR data in $\sqrt{s_{NN}} = 130GeV$ Au-Au collisions will be presented. We will also present the spectra of weak-decay strange particles from this method which is consistent and complementary to the measurements by V0 identification.