Production of K^{*0} in Au+Au collisions at $\sqrt{s_{NN}} = 19.6$ GeV in BES-II from STAR

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The short-lived resonances, like K^{*0}, are a good candidate to probe the hadronic phase of the matter formed in heavy-ion collisions. Due to its short lifetime, the decay daughters may interact with the hadronic medium, resulting in a change in the properties of the resonances. The decay daughters may undergo various in-medium effects like rescattering and re-generation. Hence K^{*0}/K is a unique tool to investigate the interplay between these effects in the hadronic phase during the evolution of heavy-ion collisions. The high statistics Au+Au data collected by STAR in its BES-II program with enhanced detector capabilities and a wider pseudorapdiity coverage will enable more differential measurements with reduced statistical uncertainties than those achieved in BES-I.

We will report invariant yields, p_T integrated yield (dN/dy), mean transverse momentum ($\langle p_T \rangle$) of K^{*0} using the Au+Au collisions at $\sqrt{s_{NN}} = 19.6$ GeV recorded during BES-II. The results will be compared with previous BES-I measurements. The average transverse momentum of K^{*0} will be compared with other hadrons. The resonance to non-resonance ratio will be shown as a function of centrality to study the rescattering vs. regeneration effects. Measurement of the lower limit of hadronic phase lifetime will be shown as a function of centrality and will be compared with measurements at other RHIC and LHC energies.