

S. Dash(for the STAR Collaboration)

Institute of Physics,
Bhubaneswar, Orissa, 751005, India. *sadhana@iopb.res.in*

The study of short lived resonances in relativistic heavy ion collisions can be used to understand the properties of the hot and dense medium created in such collisions. The resonances and their decay daughters undergo rescattering and regeneration in the dense medium which modifies their characteristic properties such as masses, widths, integrated yields and spectra shapes. We will present the measurement of K^* p_T spectra at mid-rapidity via its hadronic decay channel up to intermediate p_T region using the STAR detector in Au+Au and Cu+Cu collisions at $\sqrt{s_{NN}}= 62.4$ GeV and 200 GeV. The K^* integrated yield, mean p_T , and particle ratios such as K^*/K and K^*/ϕ will be used to understand the interplay between regeneration and rescattering effects. Through a high statistics dataset collected in the year 2004, we present the results on K^* nuclear modification factor R_{AA} or R_{CP} to study how resonances fit into the baryon-meson effect observed in the R_{CP} of pion, proton, K_S and Λ in the intermediate p_T range. The same dataset is used to obtain v_2 of K^* which can potentially provide further information on K^* production mechanism in the hadronic phase and the number of quark scaling for resonances.

References

- [1] J.Adams *et al.*, *Phys. Rev C* **71**(2005) 064902.