

K* Decay and the K*/K Ratio in Heavy Ion Collisions

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When relativistic heavy ions collide, a plasma of quarks and gluons (QGP) is created. This system cools down, expands and eventually reaches hadronization temperature, when a hadron gas is formed. During this phase, the constituents of the gas, among which are the K and K mesons, *can undergo further interactions and change their abundances with respect to predictions by statistical hadronization models. In a previous article [1], we studied the role of the cooling of the gas, the freeze-out temperature and the interaction cross sections on the K/K yield ratio.* In the present work, we investigate the effect of the different reaction mechanisms on this ratio. Our analysis has shown that, out of all of the possible interaction mechanisms that the K and K mesons *can undergo in the hadron gas, only the K decay and its inverse mechanism are indeed necessary to be considered in order to describe the observed yield in several collision systems studied by the ALICE collaboration.*

References

[1] Le Roux, C.; Navarra, F. S.; Abreu, L. M. Understanding the K*/K Ratio in Heavy Ion Collisions. Phys. Lett. B 2021, 817, 136284.

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