



# XXIV QUARK MATTER DARMSTADT 2014

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## $K^*(892)^0$ resonance production with the ALICE experiment at the LHC

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Short lived resonances are good probes to study the properties of strongly interacting matter produced in high energy heavy ion collisions. In particular, the resonance  $K^{*0}$  is important because of its very short lifetime which is comparable to that of the fireball. The decay daughters are expected to undergo re-scattering and re-generation processes, which could modify the characteristic properties of  $K^{*0}$  such as its mass, width and yield at low transverse momentum ( $p_T$ ). In addition, the yield of  $K^{*0}$  at high ( $p_T$ ) may be suppressed in Pb-Pb relative to pp collisions due to the effect of the hot and dense medium formation. We report the measurement of the  $K^{*0}$  resonance in Pb-Pb collisions at  $\sqrt{s_{NN}} = 2.76$  TeV and pp collisions at  $\sqrt{s_{NN}} = 2.76$  TeV via its hadronic decay channel ( $K^{*0}(\bar{K}^{*0}) \rightarrow K^\pm(K^\mp\pi^+)$ ) with the ALICE detector. The centrality dependence of the mass, width, and yield of  $K^{*0}$  in Pb-Pb collisions is compared to pp results to investigate the role of re-scattering and re-generation. The nuclear modification factor ( $R_{CP}$  and  $R_{AA}$ ) will be presented to study the effect of parton energy loss on  $K^{*0}$  production and compared with other hadrons to understand the effect of baryon-meson separation.

### On behalf of collaboration:

ALICE

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