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## Bottom hadro-chemistry in $pp$ and PbPb collisions at the LHC (remote)

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The hadro-chemistry of bottom quarks produced in hadronic collisions encodes valuable information on the mechanism of color-neutralization in these reactions. We first compute the chemistry of bottom-hadrons in high-energy  $pp$  collisions employing statistical hadronization with a largely augmented set of states beyond the currently measured spectrum. This enables a comprehensive prediction of fragmentation fractions of weakly decaying bottom hadrons for the first time and a satisfactory explanation of the existing measurements in  $pp$  collisions at the LHC. Utilizing the bottom hadro-chemistry thus obtained as the baseline, we then perform transport simulations of bottom quarks in the hot QCD matter created in PbPb collisions at the LHC energy and calculate the pertinent bottom-hadron observables. We highlight the transverse momentum ( $p_T$ ) dependent enhancement of the ratios (relative to their  $pp$  counterparts) between different species of bottom hadrons ( $\bar{B}_s^0/B^-$ ,  $\Lambda_b^0/B^-$  and  $\Xi_b^{0-}/B^-$ ) as a result of bottom quark diffusion and hadronization in the Quark-Gluon Plasma (QGP).

Reference: Min He and Ralf Rapp, arXiv: 2209.13419

### Category

Theory

### Collaboration (if applicable)

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