

Abstract Submitted
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Upsilon Reconstruction Efficiencies in Heavy-Ion Collisions with the CMS Detector¹ SANTONA TULI, University of California, Davis, CMS COLLABORATION — High energy heavy-ion collisions create a phase of matter characterized by color deconfinement known as the *Quark Gluon Plasma* (QGP). Quarkonium states, which are affected by Debye screening in the deconfined medium, are an effective tool for studying properties of the QGP. Relative suppression of excited bottomonium states are studied in heavy-ion collisions at the LHC at $\sqrt{s_{NN}} = 5.02$ TeV. Double ratios of the yields of excited states to the ground state are calculated to eliminate various uncertainties that affect all states similarly. Reconstruction efficiency double ratios are needed to quantify the amount of non-cancellation and the possible effects of such non-cancellation on the double ratios. We present a study of the Upsilon efficiency based on Monte Carlo simulations used to model detector response. We illustrate p_T , η , and centrality dependences of the efficiencies in pp and PbPb collisions and present efficiency double ratios for Υ (2S) and Υ (3S). The deviations of the efficiency double ratio from unity for Υ (2S) are estimated to be 1.4% or less, and are considered as systematic uncertainties for the yield double ratios.

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