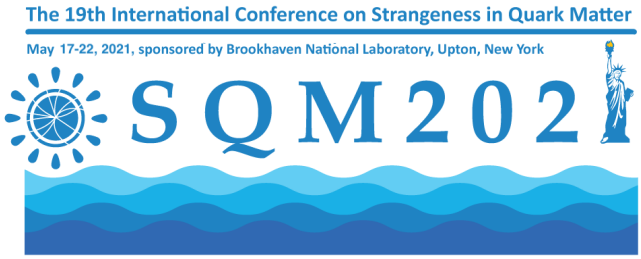

Contribution ID: **82** Type: **Experimental talk**

First measurement of the Bc meson in PbPb collisions with CMS

Thursday 20 May 2021 09:50 (20 minutes)

In the quark-gluon plasma produced in high-energy heavy-ion collisions, mesons with heavy quarks can dissociate and recombine. The CMS measurements of the nuclear modification factor of prompt and non-prompt J/ψ mesons and of Upsilon mesons help understanding these processes. Furthermore, compared to their low yield in proton-proton collisions, Bc meson production could be dramatically enhanced by recombination of bottom quarks with the numerous charm quarks in the QGP, which would provide an unambiguous probe of the recombination mechanism. We present here the first observation of the Bc meson in nucleus-nucleus collisions, through partial reconstruction of the semi-leptonic decay Bc+ ⟶ (J/ψ ⟶ μ+μ−) μ+ νμ with CMS data. The signal is extracted via a template fit on the trimuon mass, performed simultaneously in the analysis bins and in bins of the discriminant variable. The Bc nuclear modification factor is measured in two bins of the visible transverse momentum, and in two ranges of centrality.

Collaboration

CMS

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Session Classification: Heavy Flavor (Beauty)

Track Classification: Heavy quark production in nuclear collisions and hadronic interactions