Abstract Submitted
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Quarkonium formation and melting at LHC energies EDWIN NORBECK, YASAR ONEL, University of Iowa — The $b\bar{b}$ (Υ) mesons appear to be produced in the initial PbPb collision at 2.76 TeV per nucleon pair followed by partial melting in the hot quark-gluon plasma. In sharp contrast, the $c\bar{c}$ (J/Ψ) mesons seem more likely to be formed by recombination at the hadronization stage. Is the difference caused by there being many more c quarks formed than b quarks? It will be interesting to see the results of collisions at 5.5 TeV per nucleon pair for which the number of b quarks will be larger. The B_c mesons, with one quark of each kind are seldom seen in pp collisions because a particle-antiparticle pair requires the simultaneous production of four heavy quarks. Although a family of B_c mesons have been predicted, only the ground state has been seen. If the $c\bar{c}$ mesons are produced by recombination, it could be expected that B_c mesons would be abundant with PbPb. Because the quark and antiquark have different flavor the B_c are long lived, 0.45 ps (to be compared with about 1.5 ps for the lighter B mesons). They would be seen with PbPb reactions by $B_c^{\pm} \rightarrow J/\Psi(\mu^+\mu^-)\pi^{\pm}$ looking at muons and pions from displaced vertices.

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