

## Heavy Quarkonium Production in pNRQCD

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We compute the color singlet and color octet NRQCD long-distance matrix elements for inclusive production of P-wave quarkonia in the framework of potential nonrelativistic QCD. In this way, the color octet NRQCD long-distance matrix element can be determined without relying on measured cross section data, which has not been possible so far. We obtain inclusive cross sections of  $\chi_{cJ}$  and  $\chi_{bJ}$  at the LHC, which are in good agreement with data. In principle, the formalism developed in this work can be applied to all inclusive production processes of heavy quarkonia.

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