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Quarkonia measurements with the PHENIX detector

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Over the last ten years the PHENIX experiment has continued to increase the amount of recorded and analyzed data available for p+p, d+Au and A+A colliding species at various energies. These data have allowed us to analyze J/ψ mesons in all three collision types which contributes to the understanding of J/ψ formation, suppression in cold nuclear matter and anomalous suppression in heavy ion collisions. In particular the recent d+Au J/ψ results have shown that it is very difficult to match the forward rapidity data with a shadowing model and constant break up cross section. In addition PHENIX has measured Ψ' and X_c cross sections in p+p collisions at 200 GeV and their feed-down into the J/ψ . Recently PHENIX has also measured the Υ in p+p and d+Au collisions as well as setting an upper limit for the Υ suppression in Au+Au collisions. These new measurements enrich the quarkonia story and will be discussed in context of their broader impact on the field. In addition to current measurements PHENIX is entering a period of upgrades where new capabilities are going to come available. In particular a new FVTX detector scheduled to be installed by the 2012 RHIC run promises to add the Ψ' in the di-muon channel and the forward calorimeter promises to help with the acceptance of the X_c . The SVTX detector will allow the unambiguous identification of open charm in the central arms of the detector which will benefit the closed charm measurements greatly.

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