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## Heavy flavour and quarkonia measurement with ATLAS detector

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Charm and bottom quarks provide a powerful tool to study the properties of the hot, dense medium created in heavy ion collisions, and in particular may help differentiate between initial and final state effects in large collision systems. Measurements of open heavy flavour particle and quarkonia production, including their prompt and non-prompt components, and their correlations with light hadrons, build a path to understanding how heavy quarks propagate through the quark-gluon plasma. Additionally, an important component in these studies is the comparison between large and small collision systems. In this talk, ATLAS presents results on measurements of quarkonia production in PbPb collisions at 5.02 TeV, including separated prompt and non-prompt particle yields and a new measurement of the anisotropic flow of the  $J/\Psi$ . The flow measurement provides information on the stage at which charmonium states are formed during the system evolution, thus giving insights on the effects that modify their production. Additionally, first measurements of open and bound heavy quark states are available in p+Pb collisions at 8.16 TeV. Results include yields measured differentially in particle momentum and rapidity and, where available, are compared to the baseline pp measurement at the same energy.

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