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## D meson production and long-range azimuthal correlation in 8.16 TeV p+Pb collisions with ATLAS

Measurements of production of prompt charm mesons ( $D^0$  and  $D$ ) and azimuthal correlations between inclusive  $D$  and charged particles are presented in p+Pb collisions data at 8.16 TeV collected in 2016 by ATLAS. The prompt charm meson production is measured in minimum bias p+Pb data, reconstructed via two decay channels:  $D^0 \rightarrow K\pi$  and  $D \rightarrow D^0\pi \rightarrow K\pi\pi$ . The production asymmetry between forward and backward center-of-mass rapidities for the charm mesons is studied for the range of  $|y| < 0.5$ , and no significant asymmetry is observed. In the D-hadron correlations, the  $p_T$  of identified  $D$  is more closely related to the  $p_T$  of primordial heavy quarks, relative to the measurement of their decay muons. A finite elliptic harmonic coefficient for inclusive  $D^*$  and charge particles have been extracted with a significance of one to two standard deviations, depending on multiplicity, broadly consistent with what have been observed for light hadrons and muons from heavy quark decaying.

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