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Charm hadronization with LHCb fixed-target

The innovative fixed-target programme initiated by the LHCb experiment during the LHC Run 2 has been enhanced for Run 3 with the introduction of a dedicated gas injection system, SMOG2. This upgrade features a gas cell to boost fixed-target luminosity and a new system that allows the injection of non-noble gases. SMOG2 enables the collection of large datasets from pA and PbA fixed-target collisions, including high-statistics samples of charm hadrons.

Charm production measurements with SMOG2 provide a unique opportunity to deepen our understanding of charm hadronization processes in both small and large collision systems at the same energy scale, while also establishing important benchmarks for charmonium studies. This poster will present open charm production from the first data collected with the SMOG2 system, as well as future prospects for charm measurements in upcoming fixed-target collisions.

Category

Experiment

Collaboration (if applicable)

LHCb

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