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## Physics with fixed target collisions in LHCb

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The LHCb experiment, thanks to its System for Measuring Overlap with Gas (SMOG), has the unique capability to operate in a fixed target mode with the LHC beams.

Reactions of incident LHC proton beams on noble gas targets have been recorded by the LHCb experiment at a center-of-mass energy of 110 GeV and within the center-of-mass rapidity range  $-2.3 < y^* < 0.2$ . Results on anti-proton production as well as open and hidden heavy flavour hadrons production will be presented. These measurements can provide crucial constrain on particle production models of key interest for cosmic ray physics as well as for cold nuclear matter effects.

### Experimental Collaboration

LHCb

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