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Physics opportunities for a fixed-target programme in the ALICE experiment

A fixed-target programme in the ALICE experiment using the LHC proton and lead beams offers many physics opportunities related to the parton content of the nucleon and nucleus at high- x , the nucleon spin and the Quark-Gluon Plasma. We investigate two solutions that would allow ALICE to run in a fixed-target mode: the internal solid target coupled to a bent crystal and the internal gas target. The feasibility of these solutions are being studied for a possible installation at the LHC interaction point IP2 during the Long Shutdown 3.

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