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Type: **Poster**

Forward Photon Measurements at the LHC and the FoCal Proposal in ALICE

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A Forward Calorimeter (FoCal) is proposed as an addition to the ALICE experiment to be installed during Long Shutdown 3 (2024-2026).

The main goal of the FoCal proposal is to measure forward ($3.5 < y < 5$) direct photons in pp and p-Pb collisions to obtain unique experimental constraints on proton and nuclear PDFs in a new region of low x ($10^{-5} - 10^{-6}$). It provides measurements of neutral mesons, two particle correlations, and jets in p+p, p-Pb and (partially) in Pb-Pb collisions. The direct photon measurement requires a new electromagnetic calorimeter with extremely high granularity. We will discuss the physics case of this proposed detector. The design principle of the high-resolution silicon-tungsten (Si-W) sandwich calorimeter will be presented and results from the ongoing R&D program with test beams will be shown. The detector will be instrumented with Si-pad sensors with analog readout and on a Monolithic Active Pixel Sensor (MAPS) based digital pixel readout. The test beam results include linearity and energy resolution measurements, but also three-dimensional shower distributions on the sub-millimeter scale contributing to the excellent position resolution.

Content type

Experiment

Collaboration

ALICE

Centralised submission by Collaboration

Presenter name already specified

Presenter: NOVITZKY, Norbert (Helsinki Institute of Physics (FI))

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