

Contribution ID: 154

Type: not specified

PADME electromagnetic calorimeter

Thursday 24 May 2018 17:15 (20 minutes)

The PADME experiment, hosted at Laboratori Nazionali di Frascati in Italy, is going to start its data taking in a short time. It is designed to search for the Dark Photon (A'), an hypothetical particle that can explain the Dark Matter elusiveness, possibly produced in the reaction $e^+ e^- \rightarrow A' \gamma$.

Together with the target, the segmented electromagnetic calorimeter is the most important component of the experiment, since it is needed to detect the recoil photon energy and position, in such a way to measure the A' mass. It will consist of 616 $2.1 \times 2.1 \times 23.0 \text{ cm}^3$ BGO crystals arranged in a cylindrical shape and read by HZC photomultipliers with a diameter of 1.9 cm.

Here we present the results obtained during the measurements performed on the scintillating units with a radioactive source and test beams, together with an overall description of the entire experiment.

The PADME experiment, hosted at Laboratori Nazionali di Frascati in Italy, is going to start its data taking in a short time. It is designed to search for the Dark Photon (A'), an hypothetical particle that can explain the Dark Matter elusiveness, possibly produced in the reaction $e^+ e^- \rightarrow A' \gamma$.

Together with the target, the segmented electromagnetic calorimeter is the most important component of the experiment, since it is needed to detect the recoil photon energy and position, in such a way to measure the A' mass. It will consist of 616 $2.1 \times 2.1 \times 23.0 \text{ cm}^3$ BGO crystals arranged in a cylindrical shape and read by HZC photomultipliers with a diameter of 1.9 cm.

Here we present the results obtained during the measurements performed on the scintillating units with a radioactive source and test beams, together with an overall description of the entire experiment.

Secondary topics

Applications

Design concepts for future calorimeter at the intensity frontier

Primary topic

Crystals

Authors: KOZHUHAROV, Venelin (University of Sofia (BG)); PIPERNO, Gabriele; RAGGI, Mauro (LNF INFN)

Presenter: PIPERNO, Gabriele

Session Classification: Session 13