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The PADME Calorimeter

Wednesday 26 May 2021 05:00 (18 minutes)

To search a dark photon A'in the process e+ e– ⟶ A'γ, the PADME apparatus has been built at the Frascati National Laboratory of INFN. The core of PADME detector is an e.m. calorimeter to detect the signal and background photons produced in the positron annihilations on the electrons of a thin target.
The PADME calorimeter consists of two components: ECAL and SAC. ECAL is a homogeneous BGO-crystal calorimeter with a cylindrical shape with a central hole to allow the passage of large rate of Bremsstrahlung events, which are sharply peaked at small angles. To mitigate such backgrounds, the fast Small-Angle Calorimeter is placed behind the main ECAL. The in-time correlation of photon events in the SAC and ECAL allows the tagging of 2- and 3- gamma events and hence the efficient vetoing of backgrounds.
PADME Commissioning took place in 2018 and 2019 at the INFN Frascati National Laboratories with the beam of the Linac of the local Beam Test Facility (BTF) and results will be presented.

TIPP2020 abstract resubmission?

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Authors: Dr GIANOTTI, Paola (INFN Laboratori Nazionali di Frascati (IT)); TARUGGI, Clara (INFN - National Institute for Nuclear Physics)

Presenter: TARUGGI, Clara (INFN - National Institute for Nuclear Physics)

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