Contribution ID: **81** Type: **Parallel session talk**

Searching for the X17 with the PADME experiment

Friday 19 July 2024 09:39 (18 minutes)

The PADME experiment was originally designed to test dark matter theories predicting the existence of a "Dark Sector" composed of particles that interact with Standard Model ones exclusively through the exchange of a new, massive mediator.
The confirmation of the X17 anomaly, observed in nuclear decays at the ATOMKI in Debrecen, sparked considerable interest in the particle physics community. If the anomaly arises from the decay of a new state into an e^+e^- pair, the time-reversal symmetry implies that it must be also producible through e^+e^- annihilation. The PADME experiment can rely on the world's only e^+ beam with the appropriate energy for a resonant production of X17. The collaboration dedicated 2022 data taking to investigate the X17 anomaly via $e^+e^{\rightarrow}X17 \rightarrow e^+e^-$ reaction, aiming to confirm the particle hypothesis.
The talk gives an overview of the scientific program of the experiment and presents preliminary results on the X17 search.

Alternate track

1. Beyond the Standard Model

I read the instructions above

Yes

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