**Istituto Nazionale di Fisica Nucleare Laboratori Nazionali di Frascati**

Avviso di Seminario Generale

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**Search for the X17 particle in the 7Li (p, e+e-) 8 Be process with MEG II**

The observation of a resonance structure in the opening angle of the electron-positron pairs in the 7Li(p,e+e−)8Be reaction was claimed and interpreted as the production and subsequent decay of a hypothetical particle (X17). Similar excesses, consistent with this particle, were later observed in processes involving 4He and 12C nuclei with the same experimental technique.

The MEG-II apparatus at PSI, designed to search for the µ+ → e+ γ decay, can be exploited to investigate the existence of this particle and study its nature. Protons from a Cockroft-Walton accelerator, with an energy up to 1.1 MeV, were delivered on a dedicated Li-based target. The γ and the e+ e− pair emerging from the 8Be transitions were studied with calorimeters and a spectrometer, featuring a broader angular acceptance than previous experiments.

In this seminar we present the analysis and the result of a four-week data-taking in 2023 with proton energy varying from 400 keV to 1080 keV, resulting in the excitation of two different resonances with Q-value 17.6 MeV and 18.1 MeV.

## Mercoledi’ 17/9 ore 14:30 Aula Salvini

<https://agenda.infn.it/event/48266/>

L'invito è esteso a tutto il personale interessato, che è caldamente invitato a partecipare.