FZU Institute of Physics of the Czech Academy of Sciences

Invitation

to the seminar of Division of Elementary Particle Physics of the Institute of Physics of the Czech Academy of Sciences

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Measurement of the ATOMKI anomaly

Abstract: Theoretical prediction for the distribution of the angle between electrons and positrons originating in internal pair creations is a monotonic featureless decrease with the opening angle. Studies on excited states of 8Be and 4He nuclei, made in ATOMKI, Hungary, over the last decade, revealed deviations from this expectation. If true, the anomaly can be explained by introducing a new short-lived neutral boson that can still fit into known experimental and theoretical constraints. Although several independent laboratories have been trying to verify these results world wide, a satisfactory model does not exist yet.
In this seminar I will give an overview of a selection of different experiments aiming at the solution of the ATOMKI anomaly and summarise their results. I will also describe the ongoing construction of a spectrometer for light charged particles at the Van-de-Graaff accelerator facility of the Institute of Experimental and Applied Physics (IEAP) at the Czech Technical University in Prague in order to either confirm or disprove the above-mentioned anomaly.

When: Thursday, March 13, 2025 at 2PM
Where: Dvořák hall, FZU, Pod Vodárenskou věží 1, Prague

For more information, please see https://indico.fzu.cz/event/283/

Roman Lysák Jiří Hejbal