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Preparation of the hypertriton binding energy measurement at MAMI

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The hypertriton puzzle concerns the connection between lifetime and binding energy of the simplest yet worst understood hypernucleus consisting of one proton, neutron and Lambda.

A new experiment is prepared at the Mainz Microtron facility to determine the hypertriton Lambda binding energy via decay pion spectroscopy, which was successfully pioneered in the recent years. The experiment makes use of a novel high luminosity lithium target which at the same time minimizes the momentum smearing. Together with a precise beam energy determination via the undulator light interference method a recalibration of the magnetic spectrometers will be done to achieve the goal of a statistical and systematic error of about 20 keV.

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