

Neutron lifetime measurement with the big gravitational trap for ultracold neutrons. Current state and future prospects.

Wednesday, 24 October 2018 18:05 (15)

A new measurement of the neutron lifetime, carried out with the aid of a large gravitational spectrometer made in Petersburg Institute of Nuclear Physics (PNPI) is presented. In our experiment the measurement of neutron lifetime is carried out using the method of storing ultracold neutrons in a material trap with gravity barrier. Further improvement of the obtained result can be achieved at the helium temperatures. A modified installation scheme and the first results of cryogenic tests are discussed.

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Session Classification : Facilities and Advanced Detector Technologies

Track Classification : Facilities and advanced detector technologies