

Status of the aSPECT experiment

Tuesday, 10 September 2013 12:00 (20 minutes)

The aSPECT experiment aims to determine the beta-neutrino angular correlation in the decay of the free neutron to determine the ratio of the weak coupling constants g_A/g_V . The past years have been used to optimize the set-up and to investigate and minimize systematic effects. A new beam-time to determine the beta-neutrino angular correlation with an uncertainty of $\sim 1\%$ has taken place with this improved set-up at the cold neutron beam of PF1b at the Institut Laue Langevin from May to August 2013.

The focus of this talk will be the major improvements and investigations leading to the beamtime in 2013. These include a modified detector electronics to avoid saturation effects and an improved electrode system to suppress field emission and optimized with respect to fluctuations of the work function.

Summary

The improvements of the aSPECT experiment with which a proton recoil measurement was performed at the ILL in 2013 will be presented.

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