

Abstract Submitted  
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**Neutron lifetime measurement with pulsed beam at J- PARC:  
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TAKASHI INO, KEK, NOP COLLABORATION — The neutron lifetime is an im-  
portant parameter for Big Bang nucleosynthesis (BBN). The best neutron lifetime  
measurements have uncertainties at the 0.1% level; however, they differ by 3.8 sigma.  
In order to resolve this discrepancy, we plan to measure the neutron lifetime using a  
method originally developed by Kossakowski et al. which is different from the other  
0.1% accuracy experiments. In our method, which uses a pulsed cold neutron beam  
at J-PARC, the electrons from the beta decay of the neutron are detected with a  
time projection chamber (TPC). A small amount of  $^3\text{He}$  is added to the gas mix-  
ture in order to simultaneously measure the neutron flux. We report on the recent  
upgrade of the TPC and the Data Acquisition System which were used to take data  
during the period of February-June 2014.

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