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Liquid Xenon Gamma Ray Detector for MEG

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MEG experiment is a rare muon decay search experiment. A muon rare decay $\mu^+ \longrightarrow e^+ + \gamma$ violates lepton flavor conservation. The standard model predicts too small branching ratio to observe, however many new theories predict observable branching ratio. MEG experiment has sensitivity to the background ratio better than 10^{-13} which is two orders of magnitude better than current experimental limit 1.2×10^{-11}. One feature of the experiment is a liquid xenon scintillation gamma ray detector. The detector consists of 800 litters of liquid xenon and 850 photo-multipliers. We performed beam tests to measure resolutions of the detector using prototype. MEG experiment starts physics data taking in 2007.

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