



Contribution ID: 196

Type: Parallel Session Talk

## Analysis of the MEG experiment to search for $\mu^+ \rightarrow e^+ \gamma$ decays

*Friday, 23 July 2010 09:30 (13 minutes)*

A lepton flavor violating rare muon decay  $\mu \rightarrow e \gamma$  is forbidden in the standard model. On the other hand, new theories, such as supersymmetric grand-unification theory etc, predict the branching ratio in the range of  $10^{-14}$ - $10^{-12}$ , which is just below the current experimental upper bound ( $1.2 \times 10^{-11}$ ) set by a previous experiment. MEG experiment is designed to search for the decay with a sensitivity of  $10^{-13}$ . The physics run was started in 2008. Sensitivity from the initial three months of data is  $1.3 \times 10^{-13}$ , and 90% confidence level limit was set to be  $2.8 \times 10^{-11}$ . In 2009, more than twice the data with respect to 2008 was acquired, hence it is promising the sensitivity will be better than the current limit. In this talk, details of analyses of each sub-detectors (900 liter liquid xenon calorimeter, ultra-light drift chambers and high resolution timing counters) and physics analysis for 2009 data are described.

**Primary author:** Dr SAWADA, Ryu (The University of Tokyo)

**Presenter:** Dr SAWADA, Ryu (The University of Tokyo)

**Session Classification:** 06 - CP violation, CKM and Rare Decays

**Track Classification:** 06 - CP violation, CKM and Rare Decays