

Sensitivity and Backgrounds

Table 1. Expected improvement factors for the signal acceptance

Item	Improvement factor	Comments
Measurement time window	X 2.5 (for Al)	No pions in a beam
No muon beam stop	X 1.7	Narrow beam energy width
Measurement momentum window	X1.3	Thinner target thickness
Total	X 5.6	

Table 2 shows a preliminary estimation of a net background event rate, which is about less than 0.1 at a sensitivity of better than 10^{-18} , although detailed simulation are needed.

Table 2. preliminary estimation of background events at a sensitivity of 10^{-18}

Item	rate	Comments
Muon decay in orbit	0.05	350 keV (FWHM) resolution
Radiative muon capture	0.01	
Pion related backgrounds	~0	No pions
Muon decay in flight	~0	Momentum cut at extraction
Cosmic rays	0.002	
Total	0.06	