Table 1: Muon neutrino and electron antineutrino CC interaction rates in the absence of oscillations, calculated for baseline length $L = 732$ km (FNAL $\rightarrow$ Soudan), for MINOS using the wide band beam and a muon storage ring delivering 10^{20} decays with $E_\mu = 10, 20$, and 50 GeV at 3 baselines. The neutrino factory calculation includes a realistic muon beam divergence and energy spread.

Experiment		Baseline (km)	$\langle E_{\nu_\mu} \rangle$ (GeV)	$\langle E_{\bar{\nu}_e} \rangle$ (GeV)	N(ν_μ CC) (per kt–yr)	N($\bar{\nu}_e$ CC) (per kt–yr)
MINOS	Low energy	732	3	–	458	1.3
	Medium energy	732	6	–	1439	0.9
	High energy	732	12	–	3207	0.9
Muon ring	E_μ (GeV)					
	10	732	7.5	6.6	1400	620
	20	732	15	13	12000	5000
	50	732	38	33	1.8×10^5	7.7×10^4
Muon ring	E_μ (GeV)					
	10	2900	7.6	6.5	91	41
	20	2900	15	13	740	330
	50	2900	38	33	11000	4900
Muon ring	E_μ (GeV)					
	10	7300	7.5	6.4	14	6
	20	7300	15	13	110	51
	50	7300	38	33	1900	770

and

$$N_{\overline{\nu}} = 0.6 \times 10^{-14} \left[\frac{(E_\mu, \text{GeV})^3}{(L, km)^2}\right] \times C(\nu) \text{ events per kt}, \tag{14}$$

where

$$C(\nu_\mu) = \frac{7}{10} + P_\mu \frac{3}{10}, \quad C(\nu_e) = \frac{6}{10} - P_\mu \frac{6}{10} \tag{15}$$

$$\tag{16}$$

The calculated ν_e and ν_μ CC interaction rates resulting from 10^{20} muon decays in the beam–forming straight–section of a neutrino factory are compared in Table 1 with expectations for the corresponding rates at the next generation of accelerator–based neutrino experiments. Note that event rates at a neutrino factory increase as E_μ^3, and are significantly larger than expected for the next generation of approved experiments if $E_\mu > 20$ GeV. The radial dependence of the event rate is shown in Fig. 6 for a 20 GeV neutrino factory and three baselines.