Questions

- How accurately do we need to measure neutrino parameters?

  (Should we try to measure θ_{13} below the level relevant for CP violation?

  Tri-bi-mixing? Overconstraints?)

- What measurements are most important to testing models of fermion masses?

  (Dirac or Majorana, mass hierarchy…
  Is there a realistic hope to confirm a theory of fermion masses? …SUSY spectrum)

- Are there characteristic signals associated with fermion mass structure?

  (FCNC, EDMs, familons, family gauge bosons…?

- How many neutrinos?

  (4^{th} generation, sterile neutrinos, modulini?

- GUT implications?

  (Will we ever be able to confirm the see-saw mechanism?)

- How accurately do we need to measure neutrino parameters?

Mixing angles $\quad \Delta(27)$ model: $\varepsilon_\nu = 0.05$ expansion parameter

$$\sin^2\theta_{12} \approx \frac{1}{3} \pm 0.03$$

$$\sin^2\theta_{23} \approx \frac{1}{2} \pm 0.03$$

$$\sin\theta_{13} \approx \sqrt{\frac{m_e}{2m_\mu}} = 0.053 \pm 0.01(?) \quad (3 \pm 1^o)$$

King; GGR, Varzielas

$$\longrightarrow \quad \theta_{12} + \frac{1}{\sqrt{2}}\frac{\theta_C}{3}\cos(\delta - \pi) \simeq 35.26 \pm 2^o$$

$3\cos(\delta - \pi)$

From charged lepton mixing

Antusch, King

- Are there characteristic signals associated with fermion mass structure?

FCNC, CP violation: $\mu \to e\gamma : \ \delta^{l}_{LR} \approx 10^{-4}$ c.f. $\leq 10^{-5}\,|_{Expt}$

$EDMs : \ \left|\mathrm{Im}\left(\delta^{u}_{LR}\right)_{11}\right| \approx 2.10^{-8} \quad c.f\ 10^{-6}\,|_{Expt}, \left|\mathrm{Im}\left(\delta^{d}_{LR}\right)_{11}\right| \approx 2.10^{-7} \quad c.f\ 10^{-6}\,|_{Expt}$

$\left|\mathrm{Im}\left(\delta^{l}_{LR}\right)_{11}\right| \approx 6.10^{-8} \quad c.f\ 10^{-7}\,|_{Expt}$