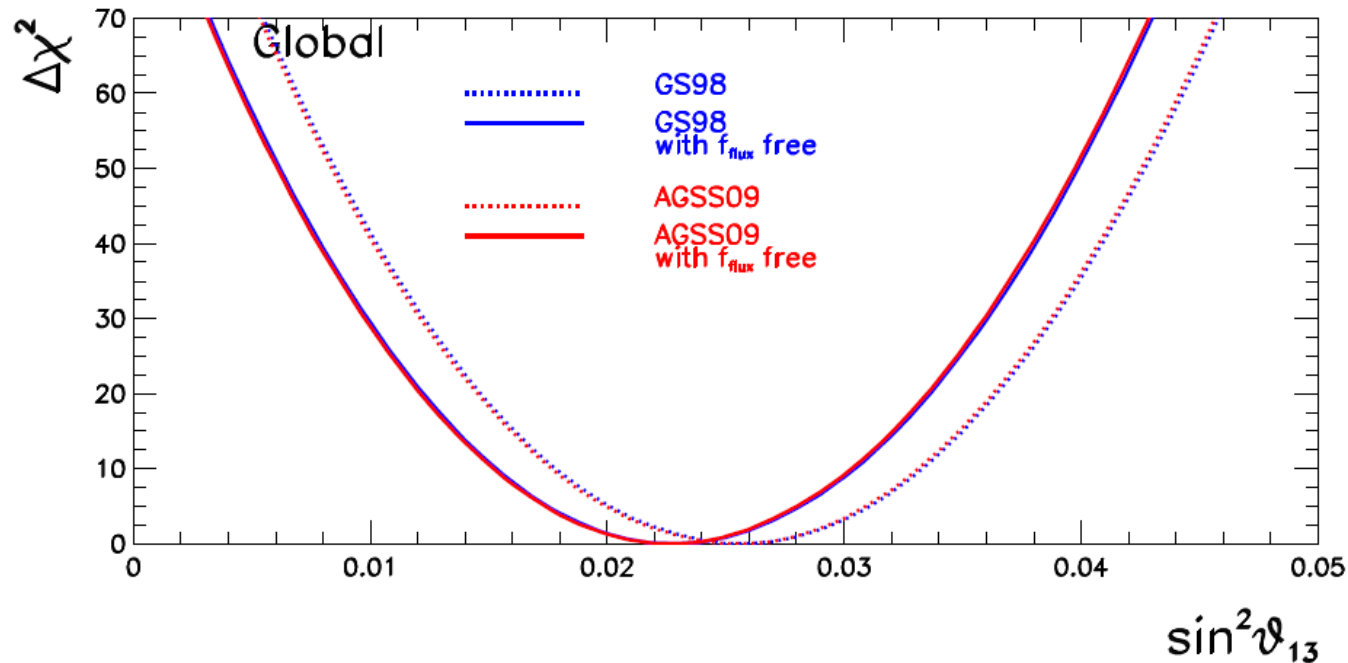


WG1 Setting the scene

E. Fernández Martínez, P. Vahle
and T. Nakadaira

θ_{13} is large!!!



- use fluxes from *Huber, 1106.0687* without SBL reactor data

$$\sin^2 \theta_{13} = 0.0257 \pm 0.0025, \quad \theta_{13} = (9.2 \pm 0.46)^\circ, \quad \sin^2 2\theta_{13} = 0.100 \pm 0.0095$$

- leave reactor flux free and include SBL data in fit

$$\sin^2 \theta_{13} = 0.0230 \pm 0.0023, \quad \theta_{13} = (8.7 \pm 0.44)^\circ, \quad \sin^2 2\theta_{13} = 0.090 \pm 0.0090$$

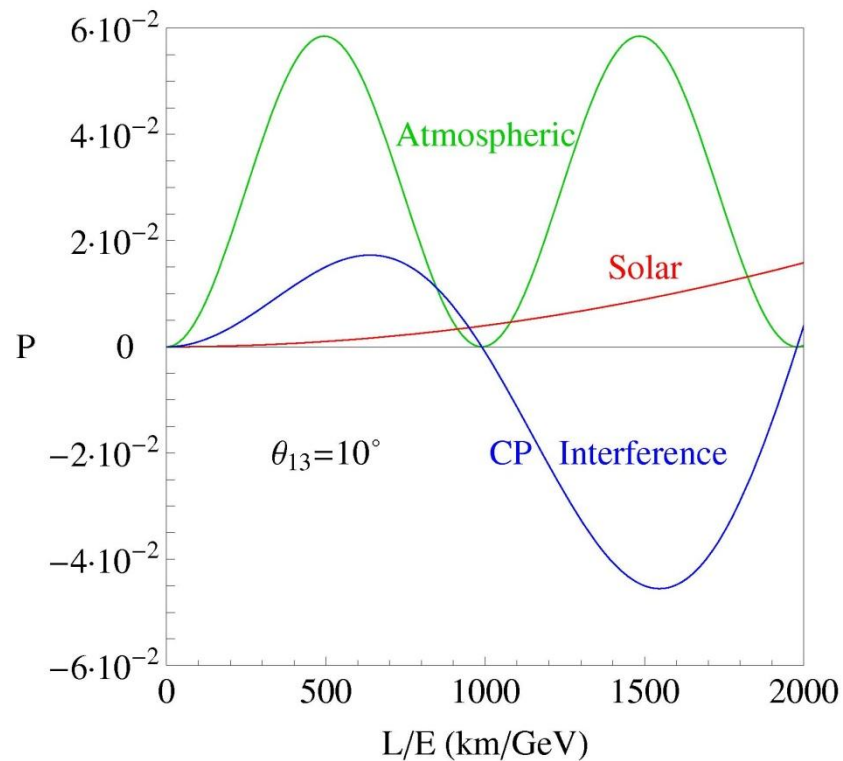
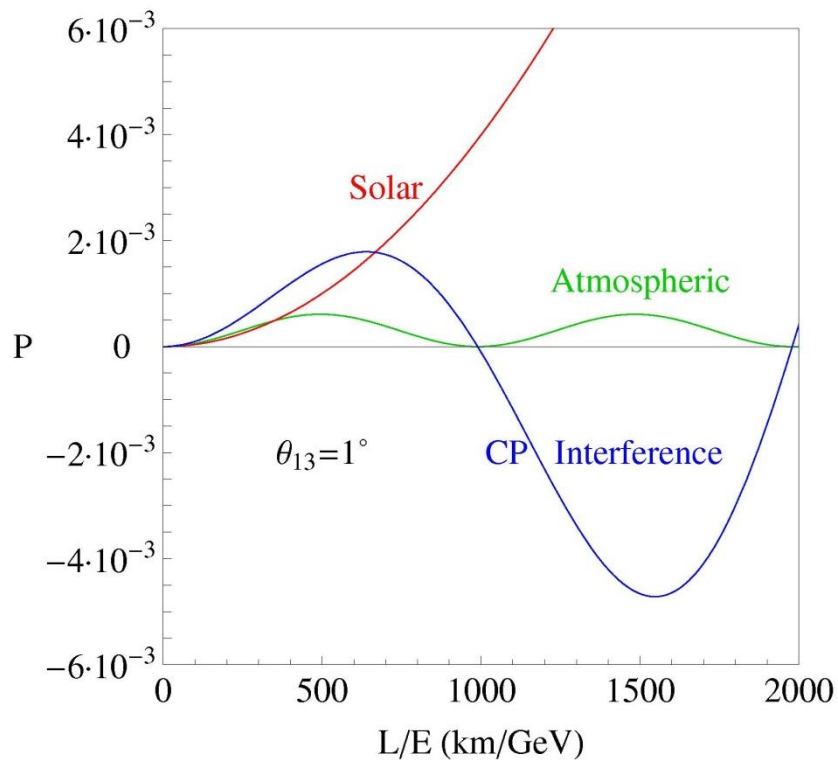
Thomas Schwetz @ "What is nu?" GGI Florence

see also D. V. Forero et al 1205.4018 and G.L. Fogli et al 1205.5254

Questions from Geneva

- Precision: Is the **Neutrino Factory** the only facility able to achieve the required accuracy?
- Session 1 Tuesday 24th **11:00-13:00**:
 - Comparison of the precision achievable at each facility
 - A **Neutrino Factory MIND** at large θ_{13}

Systematics and large θ_{13}



Questions from Geneva

- Impact of **systematics** for large θ_{13} :
 - What is the impact of **systematic uncertainties** on the **sensitivities** of future facilities?
 - Identify crucial **uncertainties** in each facility, and what the impact is on the detector design program.
 - Can we use **systematics** to argue in favor or against certain facilities?

Questions from Geneva

- Sessions 2 14:00-16:00 and 3 16:30-17:10 on Tuesday 24th joint with **WG2**:
 - Neutrino Energy Reconstruction and the Shape of the **CCQE-like** Cross-Section at **MiniBooNE**
 - Systematics and **near detectors**: **T2K, Nova, NF**
 - Nuclear Correction in **Neutrino-Nucleus DIS** and their Compatibility with Global NPDF Analyses

Questions from Geneva

- Sterile neutrinos:
 - What is the impact of **eV-scale** sterile neutrinos on three flavor physics?
 - Can we (should we) design a next stage facility able to address both sterile and standard oscillations?
- Session 4 Wednesday 25th **9:00-10:30:**
 - Introduction to sterile neutrinos
 - Overview of anomalies and fits
 - Future short baseline experiments.

Questions from Geneva

- Session 5 Wednesday 25th 14:00-16:00 joint with **WG2** and **WG3** fluxes:
 - NUMI Flux Uncertainties
 - T2K Flux Uncertainties
 - Beta Beam Option
 - Pion Electroproduction at CLAS and other JLAB Measurements

Questions from Geneva

- Opportunities for future facilities at large θ_{13} :
- Session 6 Wednesday 25th 16:30-18:00:
 - MINOS+/Glade
 - Daya Bay2
 - HyperK
 - Combining current experiments
- See also talks on physics potential of the Gran Sasso and medium baselines and the ESS Superbeam on Session 1 Tuesday 24th 11:00-13:00

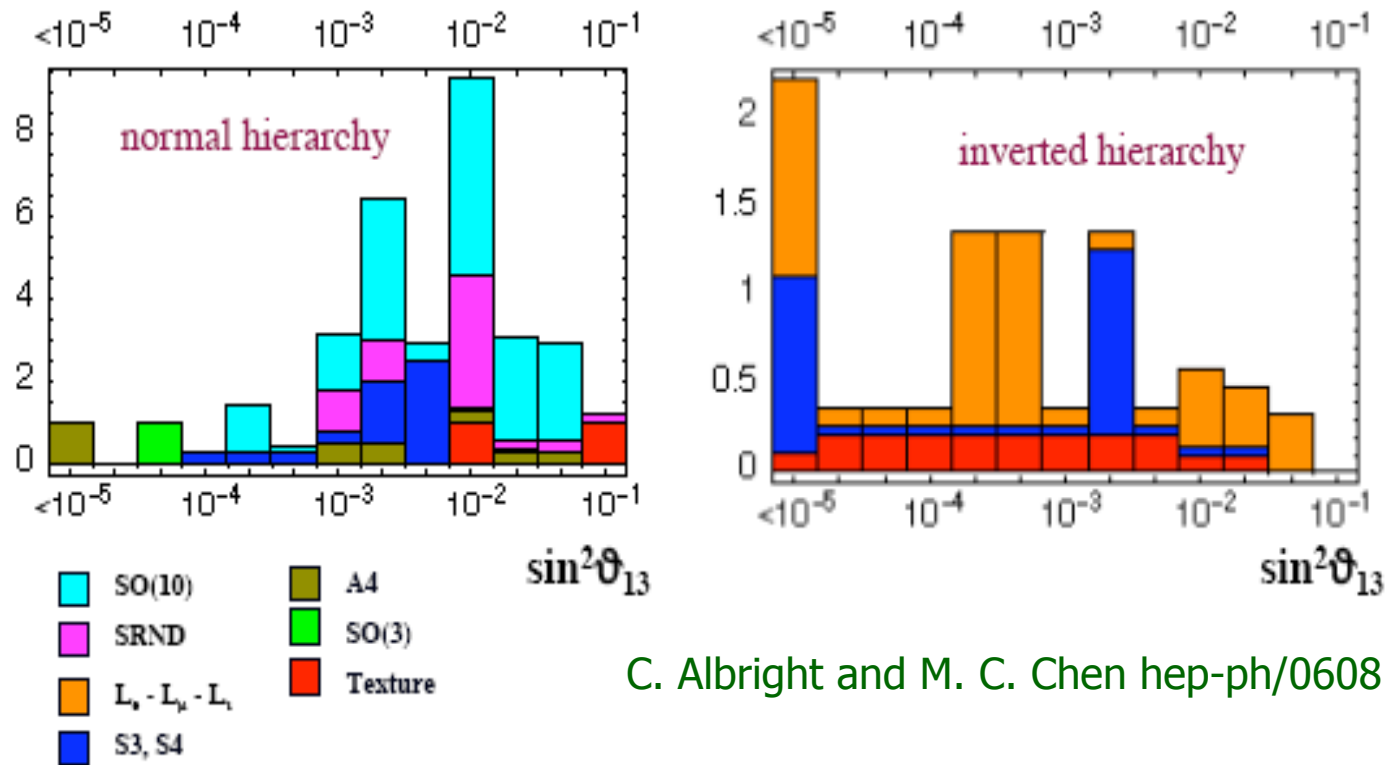
Questions from Geneva

- Session 7 Thursday 26th 9:00-10:30 joint with WG4:
 - large θ_{13} and Muon Physics
 - Dipole Moments (Theory)
 - Dipole Moments (Experiment)

Questions from Geneva

- For large θ_{13} , can atmospheric neutrinos measure the mass hierarchy?
- New initiatives: Continue to evaluate current detector technologies for future facilities.
- Session 8 Friday 27th 9:00-10:30:
 - INO
 - PINGU
 - LAr Detector R&D
 - Daedulus

Neutrino models and θ_{13}



C. Albright and M. C. Chen hep-ph/0608137

Questions from Geneva

- What is the **accuracy** on parameters needed to **constrain theoretical models**?
- Is **tribimaximal** mixing (or similar hypotheses) still appealing, or can it never be excluded?
- How accurately do we want to know the **CP phase**?
- In what sense do we need to over-constrain the **three flavor oscillation system**?
- What types of **new physics** can we constrain?

Questions from Geneva

- Session 9 11:00-13:00 Friday 26th:
 - Introduction by Mu-Chun Cheng
 - Potential sizable corrections to mixing parameters
 - Impact of *new physics* in ν oscillations
 - Discussion

WG1

- Large θ_{13} implies very good prospects for the measurements of δ and the mass hierarchy
- But it also triggers many new questions that need to be discussed
- Hope you will join us!