# **Physics and Peformance Evaluation Group**

Patrick Huber

Virginia Tech

6th IDS-NF plenary meeting September, 2010 RAL, UK

### **PPEG has grown**

As announced at FNAL, PPEG has new members:

- Stephen Parke, FNAL, US
- Joachim Kopp, FNAL, US
- Andre de Gouvea, Northwestern U., US
- Sandhya Choubey, Harish-Chandra Research Institute, India

Overall, we have now a better regional balance, esp. with respect to the US and Europe

#### **PPEG-IDR**

Update Summary of global fits, hints for θ<sub>13</sub> (3pp.)
OK Expectations for time between IDR and CDR and between CDR and start of construction (3pp.)
Update Summary of physics case from ISS report and NuFlavour workshop(s) (6pp.)
Update Review of status of competition (BB,SB), *cf.*

EuroNu 1 year report. (3pp.)

### **PPEG-IDR**

OK Baseline, justification and changes, standard physics only – timely (!) inputs from WGs required to recalculate performance. Muons from tau decays are now, partially included. (13 pp.)

• LENF (13pp.)

Missing optimization

Update performance, standard physics

OK New Physics, all options (9pp.)

Have around 30 pages already, will need to squeeze a bit.

# **Comparison to Beta Beams**

- Euronu WP6 has prepared a 1-year report
- Within Euronu, there is a separate comparison task/WP
- Will we uncritically just copy their result?
- The options studied by the machine people are missing from WP6 considerations, or vice versa

## **Comparison to Beta Beams**



EURONU WP6, J. Bernabeu, *et al.*, arXiv:1005.3146v1.

### **Possible baseline changes**

PPEG has already implemented

- abandoned silver channel
- detector mass increased to 100kt for intermediate baseline
- $\tau$ -contamination in appearance channel
- migration matrices for MIND

## **Possible baseline changes**

PPEG needs/wants to implement

- $\tau$ -contamination in disappearance channel
- latest migration matrices for MIND including QE events (when?)
- near detector, possible?
- new systematics?

#### Impact of migration



Agarwalla, PH, Tang, Winter, in preparation

# Summary

- PPEGs restructuring complete
- PPEG has more than 50% of its IDR chapter written
- LENF is the main missing part, but well under way

#### Open issues

- Baseline changes & convergence (e.g. migration matrices with QE events)
- Comparison with Beta Beams