

## Final Discussion

### THE EUROPEAN STRATEGY FOR FUTURE NEUTRINO PHYSICS concentrate on accelerator-based program

M. Lindner	(Heidleberg, theory, DCHOOZ)
A. Rubbia	(ETHZ, Larg, LAGUNA)
M. Mezzetto	INFNPadova, beta-beam)
K. Long	(ICLondon, UKNF)
S. Katsanevas	(IN2P3 Paris, WC, ASPERA)
M. Zisman	(Berkeley, Accelerator)
S. Myers	(CERN, Accelerator)
K. Nishikawa	(KEK; IPNS director)
Y.K. Kim	(Fermilab, deputy director)

1. **General strategy: science vs. time**
2. **Getting prepared: what should be done**
3. **Concluding remarks from round table panel members**

**We are starting a process:  
more important to collect all information & questions than to reach conclusions today**

- **International harmonization of efforts**
- **What area is it most important to focus on?**
- **What are the contributions that Europe can make in a global context?**
- **what would be a good path for CERN to follow**

# 1. SCIENCE vs TIME

**2010-2015** (CNGS, DCHOOZ and reactor, T2K, NOvA) we are contributing

**2015-2025?** There will be another generation of experiments (DUSEL, T2KX)  
start construction date in 5 years?

How should EU contribute?

Should we have our own superbeam in Europe?

Can we do something significant with CNGS? (x2-4 in 2018)

$\theta_{12}$  reactor experiment?

or participate in Japan -- or US

Contribute to beam? to detector?

**Ultimate machine** (would not begin construction in EU before 2020): our chance?

Neutrino Factory and/or beta-beam and/or "superior superbeam"

what are the physics aims?

-- precision on mixing angles?

-- CP violation?

-- mass hierarchy?

-- constrain the matrix?

-- synergies (LFV experiments, EURISOL, near detector physics)

do aims, choice of facility or only design details depend on the value of  $\theta_{13}$ ?

Can we see reasons to favour BB over NF or vice versa?

What do we need to know to chose?

(who will make the choice and how?)

## 2 Getting prepared

Does something need to be done?  
Is community well organized/structured?

### 2.1 Accelerator

- Make sure SPL can be compatible with high power...  
(is that enough? Is it necessary? Is it possible?)
- increase accelerator R&D in a coordinated way  
(across Europe? At CERN -lab itself? Global coordination?)
- what are the priorities?

### 2.2 Detector WC, TAsD, LArg, MIND, Magnetized LArg, TAsD ECC... ..

Is this a **complicated** problem (herding cats) ?  
or a **simple** one?

(more than one detector - they are complementary)

R&D on detectors

What framework?

Can CERN contribute to helping R&D on detectors (how/how many to chose?)

Interest in a short baseline beam? (GGM-II)