

# Workshop Comments: (Accelerator Physics Perspective)

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# Proton Economics

- For CERN to have future neutrino physics option, high power SPL must be available
  - encouraging Council decision to preserve this possibility is critical
  - capability need not be implemented on Day 1
    - but upgrade path **must** be available from the outset
- Is equivalent upgrade path for PS2 needed as well?

# Superbeams

- Not clear that **CERN-Frejus** baseline choice is optimum
  - also not clear that there are volunteers to look at alternative options
- Fair comparison in EUROnu requires that each technical option be roughly optimized
  - not only in cost, but in physics performance and "practicality" (technical risk)
- Getting international, as well as EU, buy-in on EUROnu recommendations will be invaluable
  - too many Superbeam options worldwide??

# Beta Beams

- Ion production issues likely “make or break”
  - $^8\text{B}$  looks like the key and must be resolved before 2012 ( $^{18}\text{Ne}$  also an issue but tractable)
- High- $\gamma$  ring coupled with long baseline looks impractically deep
  - must settle on realistic design parameter limits
    - avoid “promising everything and delivering nothing”
- Fermilab site seems unlikely option
  - depth of decay ring would be an issue for long baseline

# Neutrino Factory

- EUROnu effort is well internationalized
  - this design likely will have international buy-in for parameters, technical risks, and costs
- Is “coupling” to Muon Collider an advantage in Europe?
  - if so, can it be better exploited?
- Science case for NF if  $\sin^2 2\theta_{13}$  is large must be made more crisp
  - how precision helps needs to be articulated
- Potential advantages of  $\nu_e \rightarrow \nu_\tau$  must be considered