

Questions from the Near Detector Reviews

Sanjib R. Mishra
ND Physics WG
1, October, 2015

Reviewers' Questions to the DUNE-ND

Questions during the 3 Reviews

- ⇒ Internal Design Review (May/15)
- ⇒ Director's Review (June/15)
- ⇒ DOE-CD1 (July/15)

Questions posed to FGT but are largely applicable to all ND options

LBNC underscores the need to address the Reviewers' questions

⇒ **We need to do this**

*Reviewers' Questions to the DUNE-ND: a 'partial' list
...mostly about precision*

- * *Energy Scale* \Rightarrow ND ν -vs- $\bar{\nu}$ menergy-scales and asymmetry
- * *Error on the Signal* \Rightarrow Precision on ν_e/ν_μ (anti-nu); **Absolute-Flux of Anti-Nu**
- * *Beam Divergence* \Rightarrow Relating to the precision on FD/ND (E)
- * *Wrong-Sign Contamination* \Rightarrow Especially during Anti-Nu Mode
- * *Pile-Up* \Rightarrow Obvious
- * *Outside Background* \Rightarrow Particles entering the detector: effect? Constraint?
- * *Nuclear Effects* \Rightarrow What are, and how to constrain, the initial and FSI using ND?
- * *ND* \rightsquigarrow *FD* \Rightarrow Focus of the ND-TF