

# **Extrapolation Cross-Check**

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ANL

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# Files Used and Cuts

- Near data:

near\_data\_L010185N\_cedar\_phy\_bhcurv\_SUN\_mcnn

- Near MC:

near\_daikon00\_L010185N\_cedar\_phy\_SUN\_mcnn

- Far MC:

far\_beam\_daikon00\_L010185N\_cedar\_phy\_SUN\_mcnn

far\_nue\_daikon00\_L010185N\_cedar\_phy\_SUN\_mcnn

far\_tau\_daikon00\_L010185N\_cedar\_phy\_SUN\_mcnn

- ANN11 > 0.7 or MCNN > 0.83 in the plots
- SKZP and default parameter in far detector
- SKZP in near detector
- HOO and MRCC

# Selected Far/Near MC Events (ANN2PE>0.7)

near detector

	NC	numu_CC	nue_CC	nuTau_CC	Beam	Nue_CC
Josh	4429	1742				593.1
Xiaobo	4429	1742.2				593.1

far detector

	NC	numu_CC	nue_CC	nuTau_CC	Beam	Nue_CC
Josh	25.6	5.24				2.23
Xiaobo	25.6	5.2				2.2

Near detector normalized to 1e19 POT

Far detector normalized to 3.25e20 POT

# Selected Far/Near MC Events (MCNN>0.8)

near detector

	NC	numu_CC	nue_CC	nuTau_CC	Beam	Nue_CC
Josh	2019.8	1.88.7				364
Xiaobo	2021.4	1.91.1				364.4

far detector

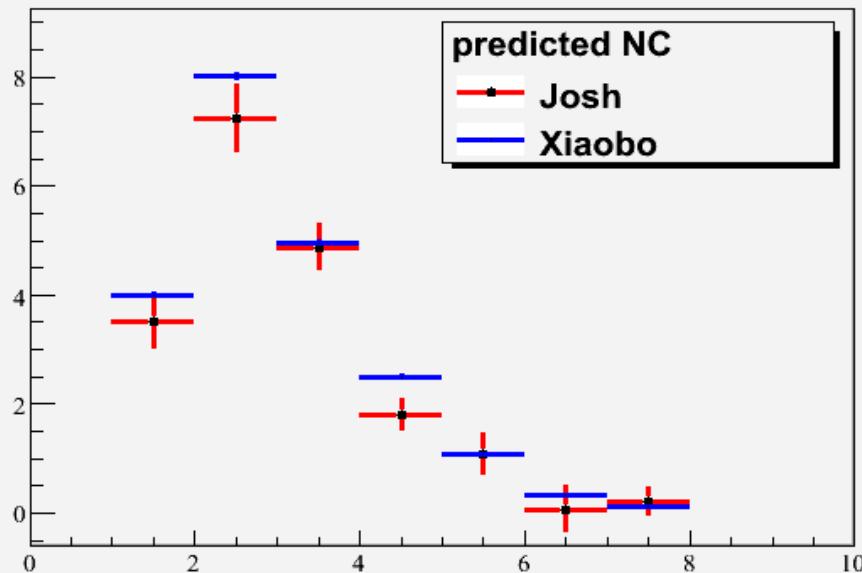
	NC	numu_CC	nue_CC	nuTau_CC	Beam	Nue_CC
Josh	17.0	3.81				2.23
Xiaobo	17.1	3.8				2.2

Near detector normalized to 1e19 POT

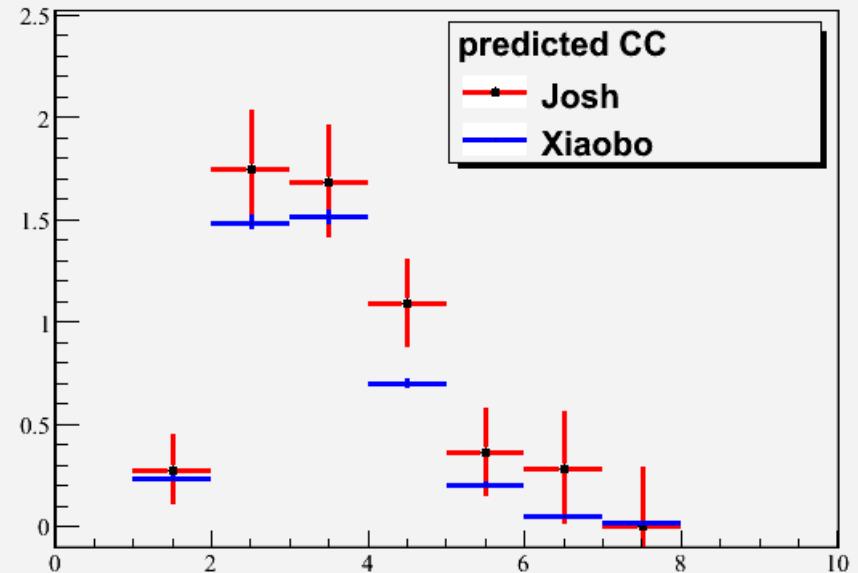
Far detector normalized to 3.25e20 POT

# Far Predictions (ANN & HOO)

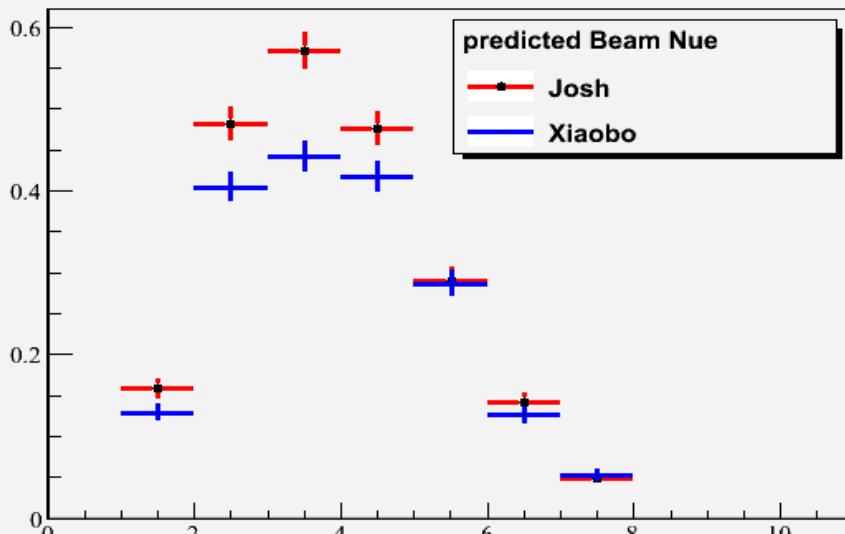
ND Reco Energy



FD Reco Energy



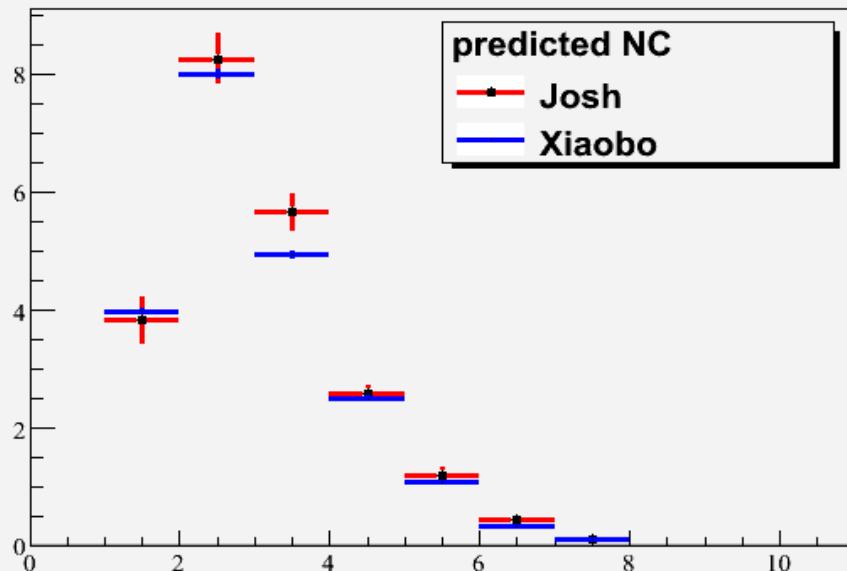
FD Reco Energy



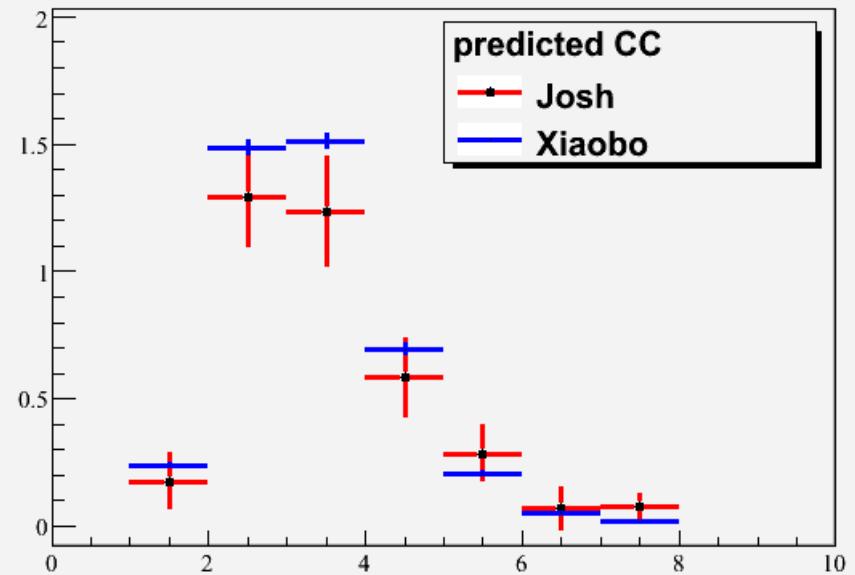
Selected near data (ANN11):  
25172

# Far Predictions (ANN & MRCC)

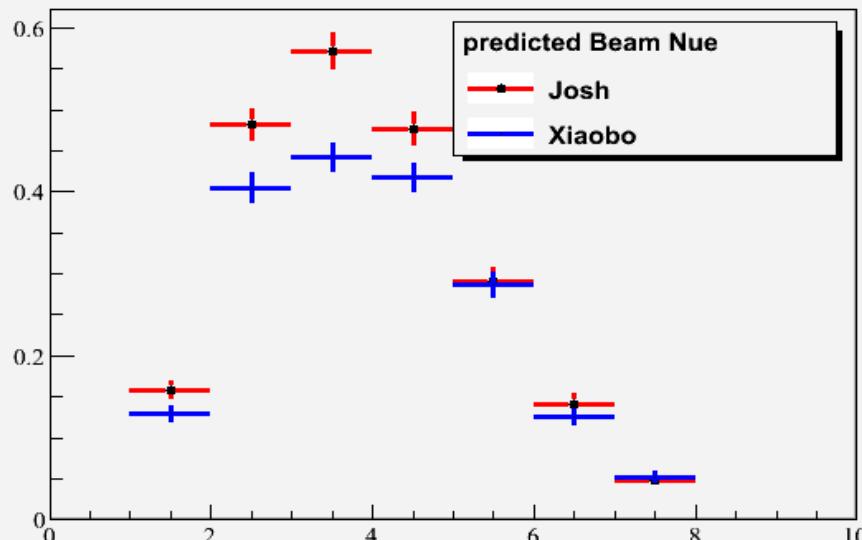
ND Reco Energy



FD Reco Energy



FD Reco Energy



Selected near data (MRCC):  
25172

# Discussion

Using the same HOO and MRCC files?  
Using the same oscillation parameters?