



UNIVERSITY OF
TORONTO



INSTITUTE OF
PARTICLE
PHYSICS



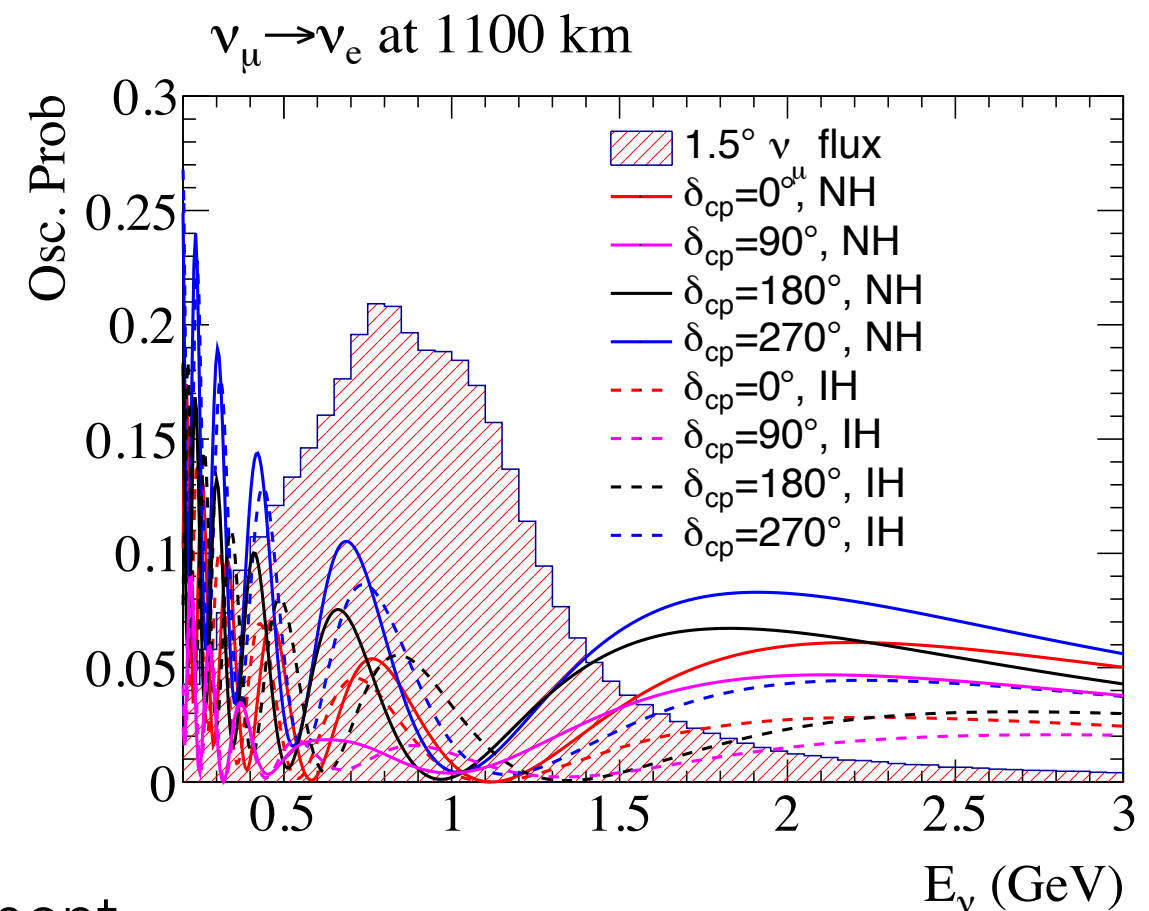
TRIUMF

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ν_e CC1 π^+ EVENT SELECTION IN T2HKK

CONCLUSIONS

- While 1st osc. maximum will be thoroughly studied at Kamioka, exploring 1st osc. max. (in addition to 2nd osc. max.) in Korea is a tremendous opportunity
- 1st osc maximum at 1100 km is >1 GeV
 - CCQE/ 0π is no longer dominant
 - Large contribution CC1 π channel should be considered
- ν_e CC1 π^+ developed using current fiTQun
 - potential to enhance MH and CPV
 - hopefully still can be improved
 - alternative method based on convolutional neural network under investigation
 - promising with 1Re/ μ separation
 - additional channels (e.g. CC π^0) should be considered.
- Multi-sample sensitivity sample under development



NEXT STEPS AND FUTURE PLANS

- Short term:
 - finish sensitivity study with existing ν_e CC1 π^+ samples
 - rerun selection on T2K-SK samples (beam instead of atmospheric)
 - adapt framework to handle multiple samples
- Midterm:
 - continue development of fiTQun ν_e samples
 - Explore ν_e CC π^0 samples
 - work will mainly be in the context T2K and will need to be translated to T2HKK
- Longterm
 - develop CNN framework for multi-ring reconstruction

