Department of Physics

College of Natural Sciences and Mathematics

Annual Progress Evaluation

Candidate's Name:	Donnie Munford	*Donnie Munford*	5/15/2024
	Print Name	Signature	Date

Title of Presentation: CC1Pi NuMu Interactions in the T2K Pi-Zero Detector

Dissertation Advisor:	Daniel Cherdack	*(signature)*	5/15/2024
	Print Name	Signature	Date

Average Scores

Committee Member / Evaluation Items	Robert A	Carlos C	Andrew	Rene Be	Daniel C		Total	Average
1. General knowledge of the research field	4	4	4	4	4		20	4
2. Presentation skill	5	3	4	4	4		20	4
3. Ability to handle questions	5	4	5	4	5		23	4.6
4. Research work	5	4	4	4	5		22	4.4
5. Progress made since last APE	5	4	5	4	5		23	4.6
6. Overall performance	5	4	4	4	5		22	4.4

Evaluation Form

On a scale from 1 [poor] to 5 [excellent] I would rate the student as follows:

Student's Name	1	2	3	4	5
1. General knowledge of the research field				✔	
2. Presentation skill				✔	
3. Ability to handle questions					✔
4. Research work					✔
5. Progress made since last APE					✔

Overall performance (enter a score from 1 to 5)   5

Is the publication status satisfactory? ✔ Y ☐ N

Committee Member:

Daniel Cherdack	*[signature]*	5/15/24
Print Name	**Signature**	**Date**

Comments (Please highlight any task the student needs to complete before next APE)

Donnie has made major progress in his analysis and his progress continues to accelerate. He is on track to complete his thesis in the next 12-15 months, which is consistent with his funding timeline.

Department of Physics
617 Science and Research Building One
Houston, Texas 77204-5005
713.743.3550

Evaluation Form

On a scale from 1 [poor] to 5 [excellent] I would rate the student as follows:

Student's Name	1	2	3	4	5
1. General knowledge of the research field	☐	☐	☐	✔	☐
2. Presentation skill	☐	☐	☐	✔	☐
3. Research Work	☐	☐	☐	☐	✔
4. Ability to handle questions	☐	☐	☐	✔	☐
5. Progress made since last APE	☐	☐	☐	☐	✔

Overall performance (enter a score from 1 to 5) 4

Is the publication status satisfactory? ✔ Y ☐ N

Committee Member:

Andrew Renshaw	*Andrew Renshaw*	04/25/2024
Print Name	**Signature**	**Date**

Comments (Please highlight any task the student needs to complete before next APE)

Donnie is doing great work, and has made much progress during the last year, he is well on his way to being able to defend sometime in 2025.

To Donnie: Keep the pace going, the last year is crunch time, not only finishing your dissertation work, but writing it all down too. I suggest to start to get introductory chapters going ASAP so you can be ahead of the game.

Overall, a nice presentation, but as discussed during the APE, the defense should have a different flow and provide more insight about what you have done and how it has pushed the research you are involved in.

Evaluation Form

On a scale from 1 [poor] to 5 [excellent] I would rate the student as follows:

Student's Name	1	2	3	4	5
1. General knowledge of the research field	☐	☐	☐	✔	☐
2. Presentation skill	☐	☐	☐	☐	✔
3. Research Work	☐	☐	☐	☐	✔
4. Ability to handle questions	☐	☐	☐	☐	✔
5. Progress made since last APE	☐	☐	☐	☐	✔

Overall performance (enter a score from 1 to 5)   5

Is the publication status satisfactory? ✔ Y   ☐ N

Committee Member:

Robert Azencott   *Robert Azencott*   5/15/2024

Print Name   **Signature**   **Date**

Comments (Please highlight any task the student needs to complete before next APE)

Evaluation Form

On a scale from 1 [poor] to 5 [excellent] I would rate the student as follows:

Student's Name	1	2	3	4	5
1. General knowledge of the research field	☐	☐	☐	✔	☐
2. Presentation skill	☐	☐	✔	☐	☐
3. Research Work	☐	☐	☐	✔	☐
4. Ability to handle questions	☐	☐	☐	✔	☐
5. Progress made since last APE	☐	☐	☐	✔	☐

Overall performance (enter a score from 1 to 5)   4

Is the publication status satisfactory? ☐ Y ✔ N

Committee Member:

Carlos R Ordonez	*Carlos R Ordonez*	4/29/2024
Print Name	**Signature**	**Date**

Comments (Please highlight any task the student needs to complete before next APE)

If he does finish his remaining tasks as we were told by his adviser, he'll be ready to write and defend his dissertation within a year. Progress has been continuous, although it seems as though there is always something new to understand in his data analysis and treatment (I guess that's the way science is). The presentation itself still leaves something to be desired. Far too many details, too many graphs and tables, and hard to follow the basic flow of the arguments. I'm a bit surprised that after all these years, and repeated advice on this aspect of his APEs, he still hasn't improved enough on this aspect. I truly hope for his defense he'll be able to do a much better job of presenting what he's done (what's the main problem, the state of the art before he started, the core of his proposals to improve the previous version of these codes, and the results that clearly show that he did made the proposed improvements. I hope he doesn't have to use too many graphs and tables to show this).

As far as I could see (maybe I'm wrong?), he hasn't published any papers...hence the N (but I'll be glad to change this if I am wrong).

Evaluation Form

On a scale from 1 [poor] to 5 [excellent] I would rate the student as follows:

Donnie Munford

Student's Name	1	2	3	4	5
1. General knowledge of the research field	☐	☐	☐	✔	☐
2. Presentation skill	☐	☐	☐	✔	☐
3. Ability to handle questions	☐	☐	☐	✔	☐
4. Research work	☐	☐	☐	✔	☐
5. Progress made since last APE	☐	☐	☐	✔	☐

Overall performance (enter a score from 1 to 5) — 4

Is the publication status satisfactory? ✔ Y ☐ N

Committee Member:

Rene Bellwied   *[signature]*   4/30/2024

Print Name	Signature	Date

Comments (Please highlight any task the student needs to complete before next APE)

Donnie is making good progress towards his thesis defense, which should be the next time we see him in the Spring of 2025. The application of his code to actual data will be crucial, but is on time according to his schedule.

The direct path to a thesis will probably require to drop the study of the potential inclusion of the pion kinematics in the model. Even without it, the systematic uncertainties need to be quantified to a level that will allow you to distinguish potential model variations (e.g. Rein-Seghal vs. Berner-Seghal) first in the water-out and then for the water-in case. The error bars on the Asimov fit results look promising, so the work is well underway and you should be able to complete most of the analysis work before the end of the calendar year.