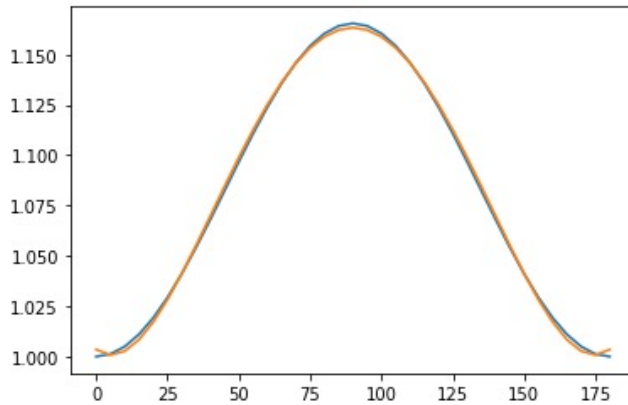


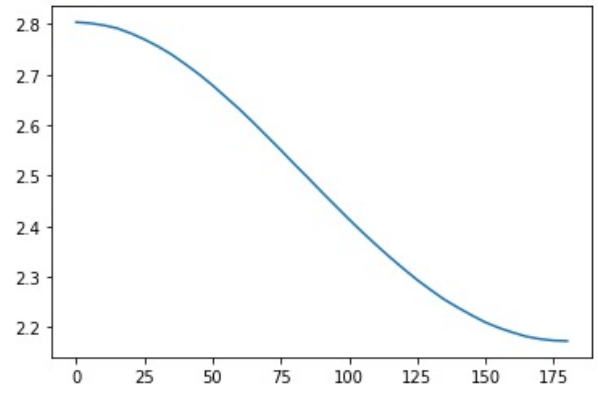
Oct 16 Janis Simulation Update

Summary

- Transplanted and modified 'IronFilter' to 'Janis'
 - Neutron source has been modified based on the paper
 - Check the .ipynb file for details
 -



cross section VS angle



energy VS angle

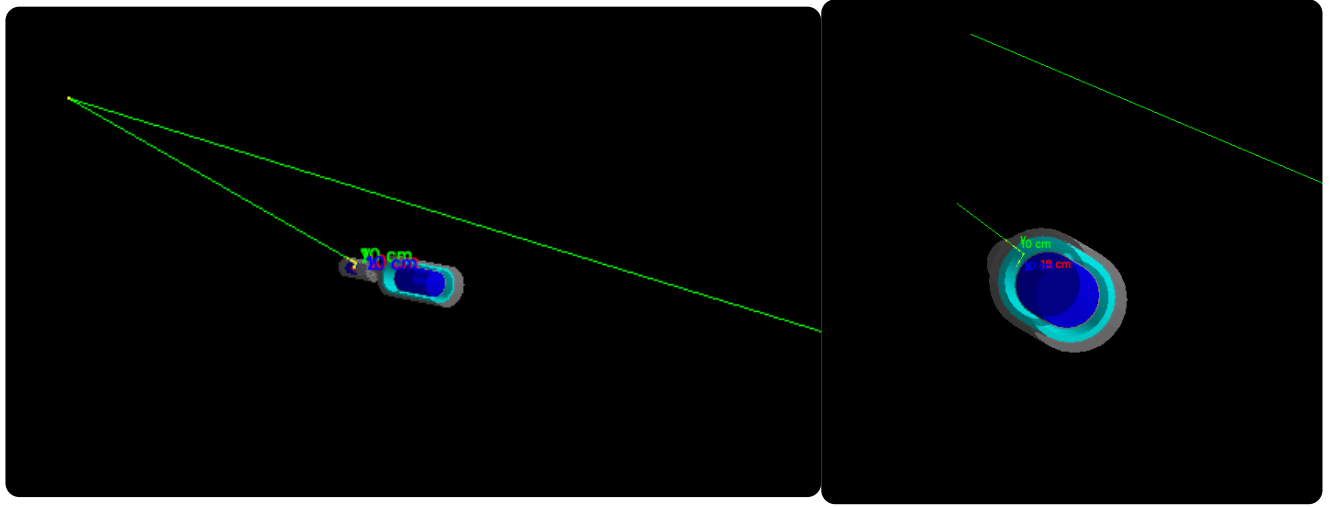
- Information saved through macro commands
 - With no volume information and physics process
 -

```
*****
* G4Track Information:  Particle = neutron,  Track ID = 1,  Parent ID = 0
*****
```

Step#	X(mm)	Y(mm)	Z(mm)	KinE(MeV)	dE(MeV)	StepLeng	TrackLeng	NextVolume	ProcName
0	0	0	-100	2.27	0	0	0	liquid helium	initStep
1	-6.53	-12.8	-87.5	2.27	0	19.1	19.1	acrylic_cell	Transportation
2	-6.79	-13.3	-87.1	2.27	0	0.741	19.8	pmt_Window	Transportation
3	-7.4	-14.6	-85.9	2.27	0	1.78	21.6	pmt_Body	Transportation
4	-7.91	-15.6	-84.9	2.27	0	1.48	23.1	pmt_interior	Transportation
5	-8.41	-16.5	-84	2.27	0	1.45	24.5	pmt_Body	Transportation
6	-9.19	-18.1	-82.5	2.27	0	2.29	26.8	pmt_array	Transportation
7	-22	-43.3	-58	2.27	0	37.4	64.2	can_sample_inner	Transportation
8	-28	-55.1	-46.5	2.27	0	17.5	81.7	can_sample_outer	Transportation
9	-28.8	-56.6	-45.1	2.27	0	2.18	83.9	can_4k_inner	Transportation
10	-31.3	-61.6	-40.3	2.27	0	7.35	91.3	can_4k_outer	Transportation
11	-32	-63	-38.9	2.27	0	2.1	93.4	can_77k_inner	Transportation
12	-33.9	-66.8	-35.3	2.27	0	5.62	99	can_77k_outer	Transportation
13	-34.5	-67.9	-34.1	2.27	0	1.72	101	can_vacuum_inner	Transportation
14	-45.5	-89.4	-13.3	2.27	0	31.9	133	can_vacuum_outer	Transportation
15	-46.1	-90.6	-12.2	2.27	0	1.72	134	world_box	Transportation
16	-2.54e+03	-5e+03	4.75e+03	2.27	0	7.28e+03	7.41e+03	OutOfWorld	Transportation

Questions and To-do

- Questions
 - How to interpret the visualization?
 - Seems that root file has saved only one event...
 - Is the behavior reasonable according to the visualization?
 -



- technical
 - G4Navigator?
 - How to output a root file in a run commanded by a macro file...
 - SetParticleEnergy units?
 - How to extract scintillation information?
- To-do list
 - Detector construction need modification in JanisPrimaryGeneratorAction.cc
 - Physics process and volume information not saved yet
 - Source position, direction and geometry?
 - Another Detector ignored for now (model?)
 - Do we need DetectorMessenger?
 - Physics list unknown and unchecked