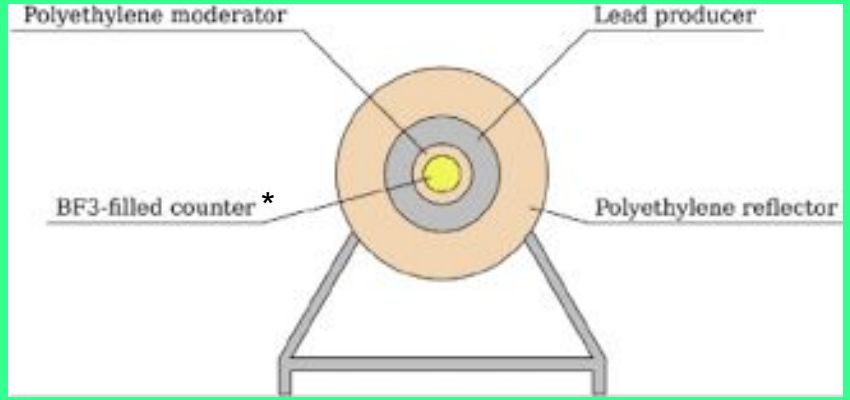
FLUKA South Pole Neutron Monitor Simulations

Variables:

- Secondary Particle Type
  - Neutrons
- Angle of Incoming Particles
  - 0°
- Energy of Incoming Particles
  - E < 100 GeV
- Type of Monitor
  - Bare, Donut, Oden, PVC, Regular



*Helium-3 Gas used at South Pole

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Intended Results

- Factor in Electronic Dead Time
  - $\Delta t <= 20$ microseconds
- Graph of CBL vs. Energy
  - CBL = Number of Detected Particles*(Beam area/Number of Incoming Particles)
  - Detection Efficiency

Oden Bare 1e-5 GeV FLUKA Simulation Output

133	8	0.1000E-04	0.43	-1.81	-88.88	0.653301E-05
264	8	0.1000E-04	1.78	0.89	-90.80	0.119827E-04
981	8	0.1000E-04	2.02	-0.49	-92.13	0.229853E-05
1614	8	0.1000E-04	-1.41	-1.63	-98.56	0.592104E-04
1944	8	0.1000E-04	-0.38	-1.27	-93.93	0.548308E-04
3655	8	0.1000E-04	1.22	-2.12	-100.37	0.217494E-04
3983	8	0.1000E-04	-0.93	0.61	-88.05	0.707336E-05
6282	8	0.1000E-04	-1.54	0.56	-98.41	0.151121E-04
7153	8	0.1000E-04	-0.23	-2.09	-89.33	0.273304E-05
7531	8	0.1000E-04	-1.96	1.48	-83.20	0.431986E-04
7583	8	0.1000E-04	2.38	0.49	-89.03	0.771419E-04
7597	8	0.1000E-04	-1.86	1.63	-91.90	0.833708E-05
7764	8	0.1000E-04	2.18	0.02	-167.98	0.563786E-06
7764	8	0.1000E-04	1.86	0.70	-171.93	0.493985E-05
7843	8	0.1000E-04	-2.20	-0.69	-190.53	0.689310E-04
8681	8	0.1000E-04	-1.26	1.48	-187.30	0.703438E-06

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