

Ar Meeting

Hongxia Dai

Sep 06, 2017

Systematic errors

• Mc input file (in cm)		Average sys error
1. Target thickness	0.075 (+/- 0.002)	0.697%
2. Beam x offset	-0.0075(+/- 0.004)	0.940%
3. Beam y offset	0.118 (+/- 0.005)	0.981%
4. Spectrometer x offset	0.122 (+/- 0.0005)	0.867%
5. Spectrometer y offset	0.098 (+/- 0.0005)	0.774%
6. Raster half-width x	0.1 (+/- 0.004)	0.740%
7. Raster half-width y	0.1 (+/- 0.005)	0.642%

Run#	#events in mc	Tar_thick =0.073	difference (%)	Tar_thick =0.078	Difference (%)	Beam x off = -0.0035	Difference (%)	Beam x off =-0.115	Difference (%)
730	140980	138815	-1.53	139301	-1.19	138979	-1.41	139817	-0.824
731	187570	187842	0.145	189345	0.946	187677	0.057	187858	0.153
739	157039	156412	-0.399	157316	0.176	159400	1.50	158304	0.805
740	278814	276839	-0.708	278580	-0.083	276727	-0.748	277177	-0.587
747	184612	184338	-0.148	184426	-0.100	185306	0.375	183652	-0.520
748	165763	167255	0.900	165770	0.004	165668	-0.057	164799	-0.581
755	176344	176441	0.055	176081	-0.149	174991	-0.767	175461	-0.500
756	167454	166851	-0.360	166887	-0.338	166132	-0.789	165684	-1.05
763	163981	164743	0.464	163710	-0.165	164105	0.075	163118	-0.526

Run#	#events in mc	Beam y off =0.123	difference (%)	Beam y off =0.113	Difference (%)	Spec x off = 0.1225	Difference (%)	Spec x off =0.1215	Difference (%)
730	140980	141330	0.248	140623	-0.253	142506	1.082	140227	-0.534
731	187570	189203	0.870	186514	-0.562	187811	0.128	188370	0.426
739	157039	157270	0.147	159402	1.504	156688	-0.223	156769	-0.171
740	278814	276652	-0.775	279061	0.088	276588	-0.798	275840	-1.066
747	184612	183269	-0.727	183251	-0.737	184213	-0.216	183414	-0.648
748	165763	166159	0.238	166992	0.741	168033	1.369	167469	1.029
755	176344	173996	-1.331	175453	-0.505	174784	-0.884	176051	-0.166
756	167454	166710	-0.444	164952	-1.494	166729	-0.432	167125	-0.196
763	163981	164071	0.054	163422	-0.340	163447	-0.325	165108	0.687

Run#	#events in mc	Spec y off =0.0985	difference (%)	Spec y off =0.0975	Difference (%)	Raster half width x= 0.104	Difference (%)	Raster half width x =0.096	Difference (%)
730	140980	138062	-2.069	141985	0.712	141712	0.519	139482	-1.062
731	187570	187183	-0.206	186930	-0.341	188419	0.452	188036	0.248
739	157039	157334	0.187	158614	1.002	158395	0.863	158501	0.930
740	278814	279479	0.238	279352	0.192	279295	0.172	278226	-0.210
747	184612	184012	-0.325	185895	0.694	184108	-0.273	185165	0.299
748	165763	166010	0.149	166420	0.396	166176	0.249	166310	0.329
755	176344	177031	0.389	175110	-0.699	177468	0.637	174490	-1.051
756	167454	166817	-0.380	166119	-0.797	165784	-0.997	166787	-0.398
763	163981	163918	-0.038	164263	0.171	164454	0.288	164081	0.060

Run#	#events in mc	Raster half width y =0.105	Difference (%)	Raster half width y =0.095	Difference(%)	Total (%)
730	140980	139433	-1.097	141516	0.380	3.948
731	187570	187218	-0.187	187706	0.072	1.637
739	157039	156668	-0.236	157641	0.383	2.884
740	278814	278874	0.021	277694	-0.401	2.031
747	184612	184742	0.070	183487	-0.609	1.764
748	165763	166409	0.389	165723	-0.024	2.279
755	176344	176088	-0.145	175019	-0.751	2.538
756	167454	166447	-0.601	166459	-0.594	2.699
763	163981	163323	-0.401	162576	-0.856	1.495