

Table 3 - CALCMMF Output showing the calculated mismatch factors.

Run No.	XMMF	YMMF	ZMMF
1	0.063	0.050	0.033
2	0.053	0.025	0.026
3	0.042	0.036	0.022
4	0.077	0.035	0.020
5	0.099	0.044	0.066
6	0.083	0.045	0.066
7	0.120	0.068	0.084
8	0.039	0.041	0.064
9	0.078	0.052	0.056
10	0.090	0.069	0.057
Average =	0.074	0.047	0.049

As can be seen in Table 3 from the average mismatch values, approximately 5-7% transverse mismatch and 5% longitudinal mismatch may result from random alignment and operational errors assuming the matching section quadrupole and buncher cavity set-points as determined from the ideal MEBT are used. It may be possible to determine more accurate matching section set-points and thereby minimize overall emittance growth in the linac by using the average values for the TWISS parameters as determined above. It is my recommendation that this issue be revisited after the MEBT parameters have become more well-established by our collaborators at LBL.

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