## linac\_variations

| <u>Inj_real_P</u><br>122 | <u>NL_real_P</u><br>1052 | <u>SL_real_P</u><br>1052 | <u>P^2_A1</u><br>1 | <u>P^2_B5</u><br>0.994 | <u>P^2_C5</u><br>0.999 | P_D(MeV/c)<br>11634 | <u>scenario</u><br>hope |
|--------------------------|--------------------------|--------------------------|--------------------|------------------------|------------------------|---------------------|-------------------------|
| 117                      | 1042                     | 1042                     | 1                  | 0.98                   | 0.999                  | 11521               | best hope               |
| 123                      | 1048                     | 1055                     | 1                  | 0.985                  | 0.976                  | 11626               | hope                    |
| 123                      | 1055                     | 1048                     | 1                  | 0.994                  | 0.998                  | 11633               | hope                    |
| 118                      | 1030                     | 1057                     | 1                  | 1                      | 0.993                  | 11525               | lose cavities in NL     |
| 105                      | 1057                     | 1030                     | 1                  | 0.999                  | 0.98                   | 11539               | lose cavities in SL     |
| 123                      | 1050                     | 1030                     | 1                  | 0.977                  | 1                      | 11515               |                         |
| 124                      | 1050                     | 1030                     | 1                  | 0.992                  | 0.998                  | 11516               |                         |
| 126                      | 1030                     | 1030                     | 1                  | 0.955                  | 0.996                  | 11399               | lose in both            |
| 120                      | 1000                     | 1000                     | 1                  | 0.864                  | 0.884                  | 11070               | lost lots in both       |

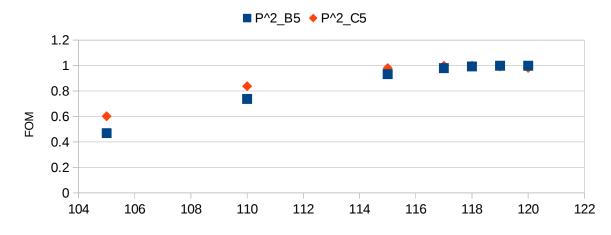
## bold: problematic

| real_P | real momentum, | as opposed to e | DT/lem setting |
|--------|----------------|-----------------|----------------|
|        |                |                 |                |

- P^2 polarization squared figure of merit
- A1 first pass to A, parity experiment
- B5, C5 fifth pass to B, C
- P\_D(MeV/c) momentum to hall D

highlighted variation would have about 32 MeV headroom per linac if all modules perform as hoped

P^2 vs injector P plotted below, showing that setup at nominal (eDT) of 117.3/1039.4/1039.4 would likely allow injectror change only (real linac momentum will be ~1042 MeV in this case)



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