



Status of Tuning Shim Investigation in Q2pF

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Harmonics without shims (low field)

NORMAL RELATIVE MULTIPOLES (1.D-4):

b 1:	-0.08998	b 2:	10000.00000	b 3:	0.00003
b 4:	0.00096	b 5:	0.00069	b 6:	0.15329
b 7:	0.00060	b 8:	0.00025	b 9:	-0.00004
b10:	-0.41354	b11:	0.00000	b12:	-0.00001
b13:	-0.00000	b14:	-0.43059	b15:	0.00000
b16:	0.00000	b17:	0.00000	b18:	0.00491

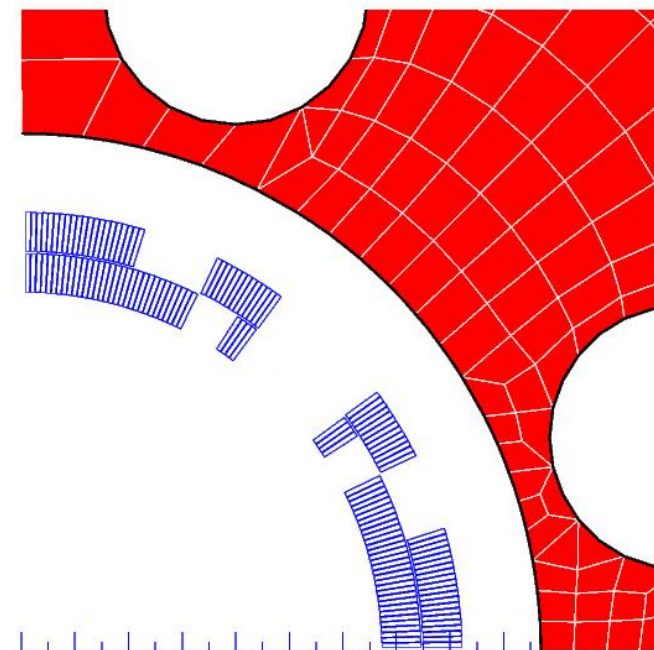
Harmonics without shims (high field)

NORMAL RELATIVE MULTIPOLES (1.D-4):

b 1:	0.32327	b 2:	10000.00000	b 3:	0.28302
b 4:	0.00690	b 5:	0.08049	b 6:	-0.10286
b 7:	0.00191	b 8:	0.00107	b 9:	0.00306
b10:	-0.40846	b11:	-0.00033	b12:	0.00010
b13:	-0.00006	b14:	-0.46480	b15:	-0.00001
b16:	0.00001	b17:	-0.00000	b18:	0.00549

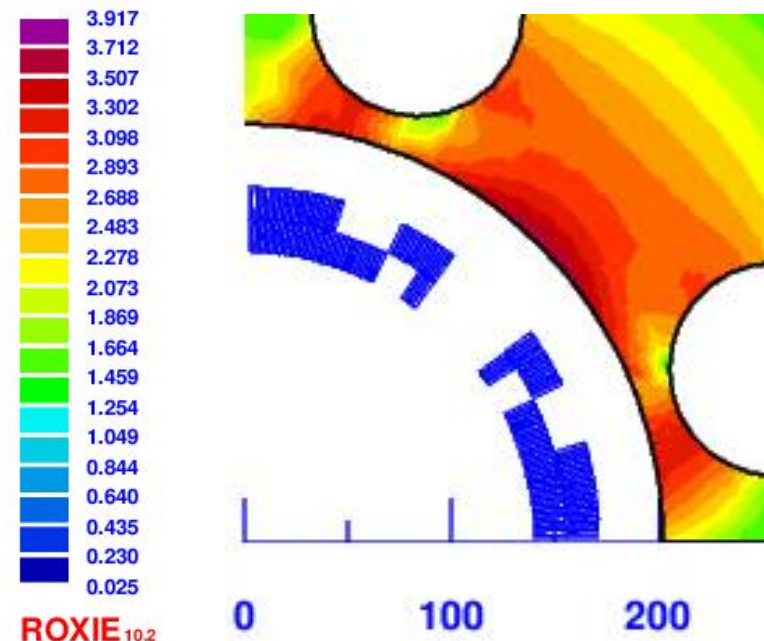
Not much Change between low field & high field.

- Small non-allowed harmonics due to loss in symmetry because of the one hole for electron beam

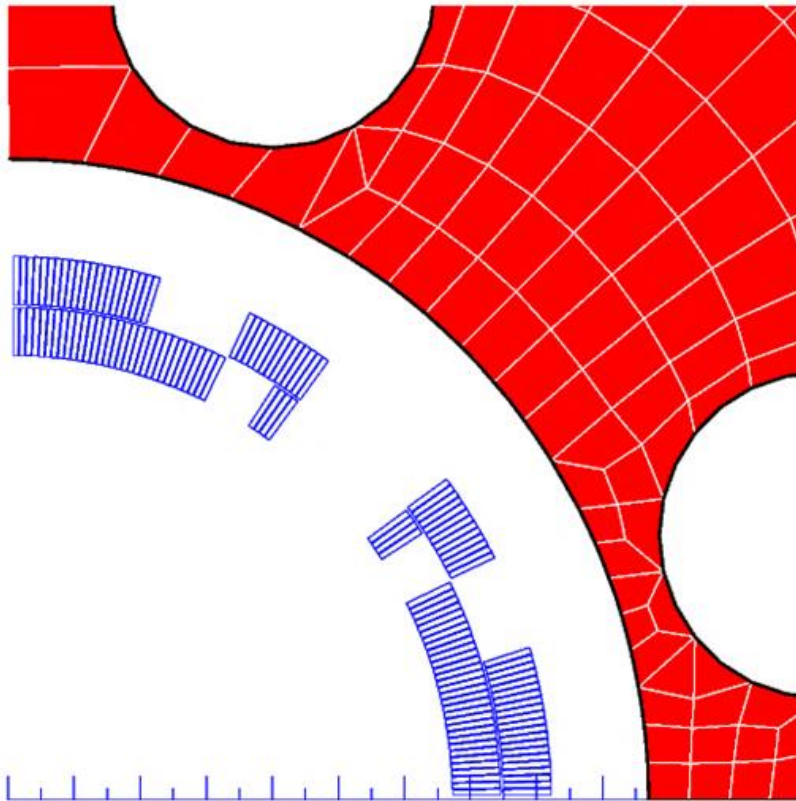


|Btot| (T)

0 20.83 41.67 62.5 83.33 104.17 125 145.83166.67 187.5 208.33229.17 250

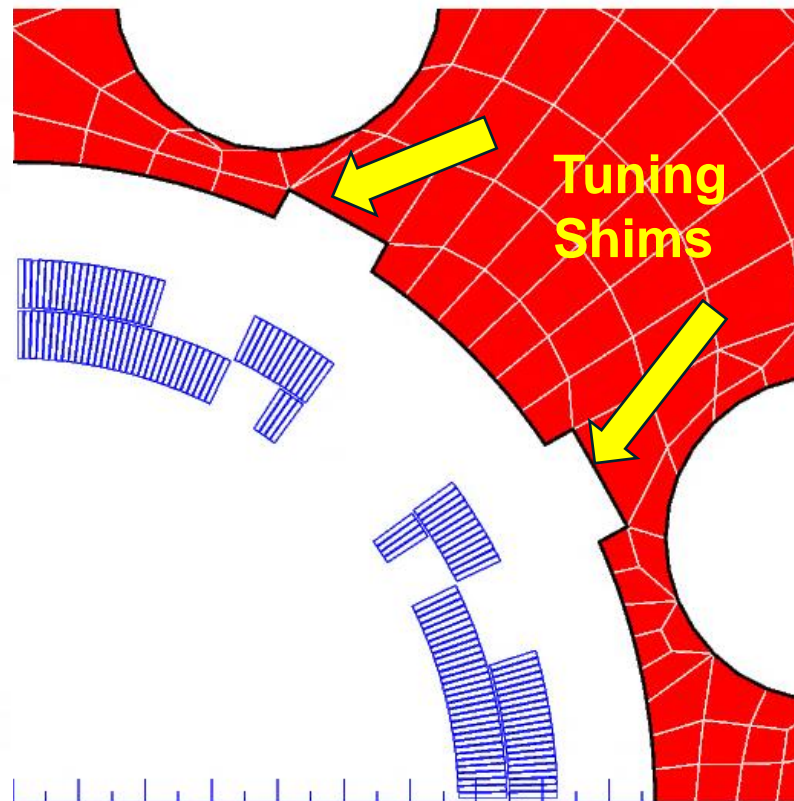


A few of many types of tuning shims examined



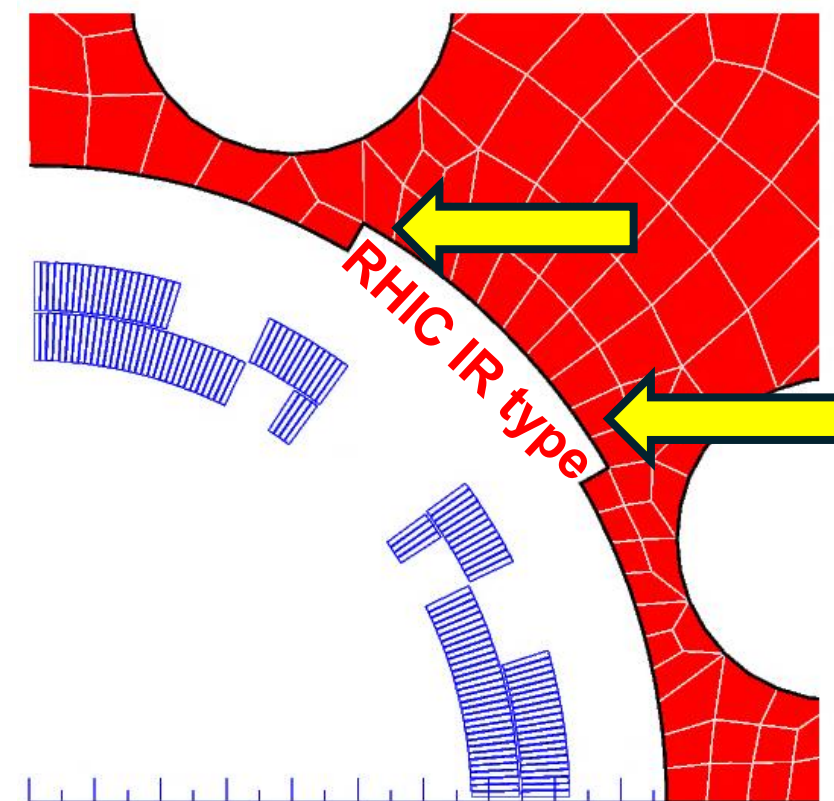
0 20.83 41.67 62.5 83.33 104.17 125 145.83166.67 187.5 208.33229.17 250

NO Shim Model



0 20.83 41.67 62.5 83.33 104.17 125 145.83166.67 187.5 208.33229.17 250

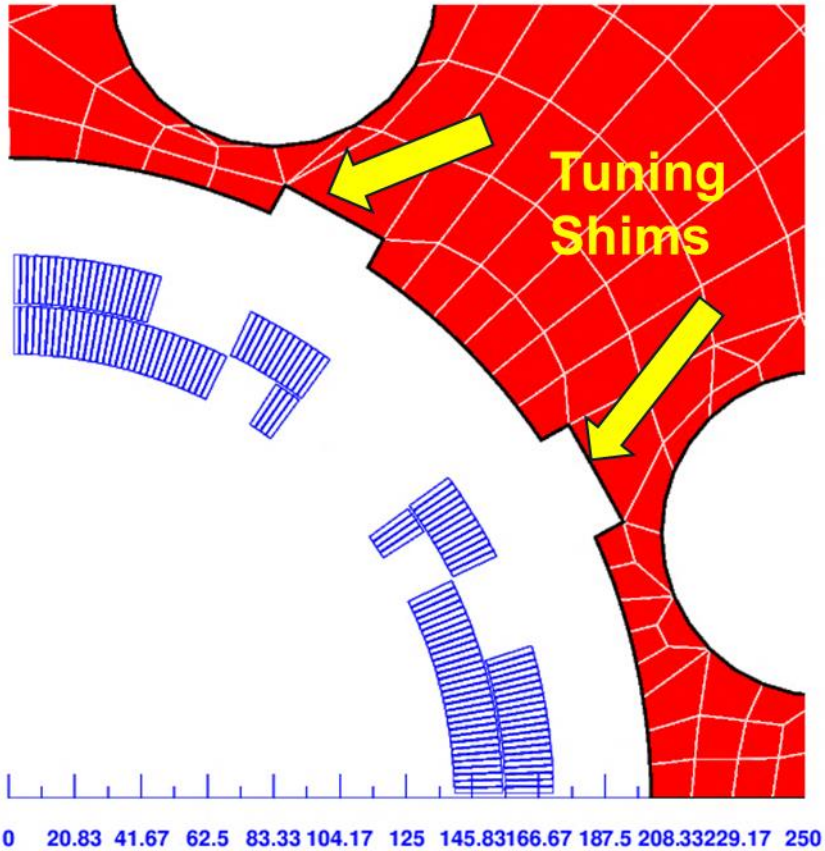
Slots for Shim



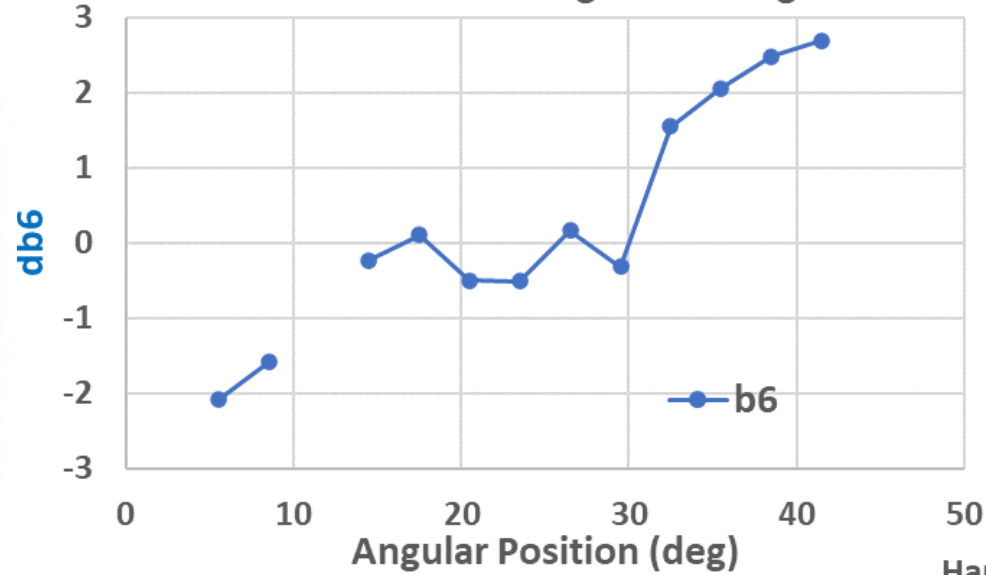
0 20.83 41.67 62.5 83.33 104.17 125 145.83166.67 187.5 208.33229.17 250

RHIC IR Quad-type Shim

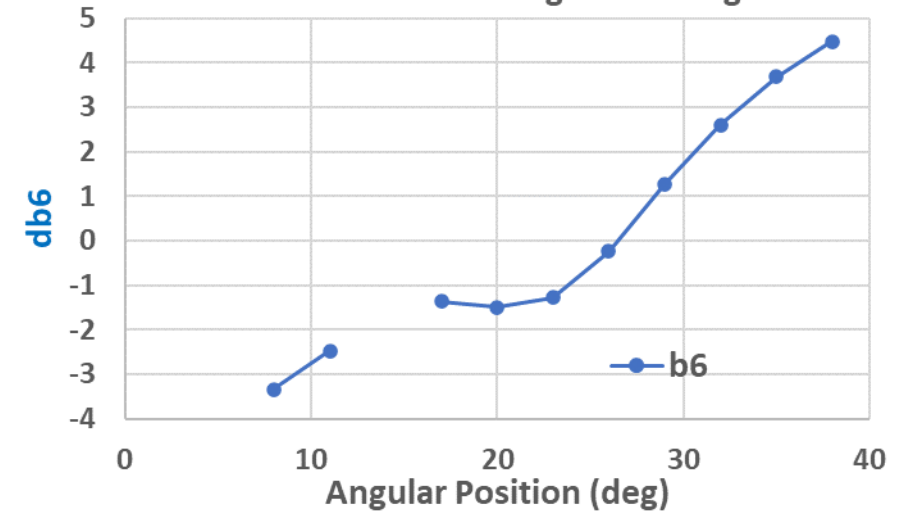
Tuning of b_6 with 5° and 10° shims



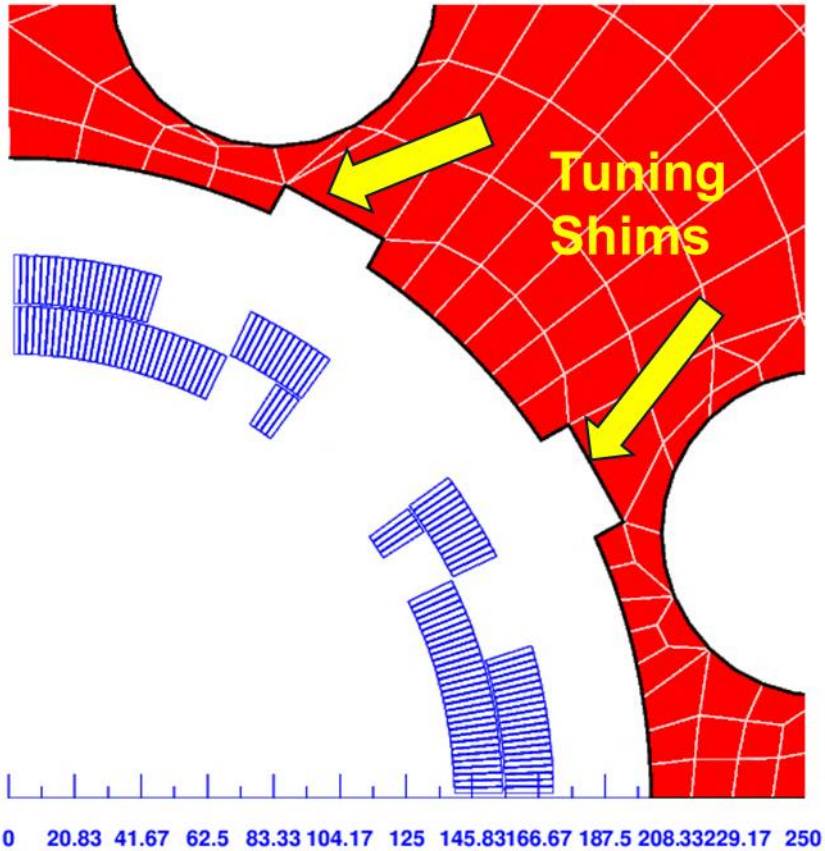
Harmonics from 5 degrees Tuning Shims



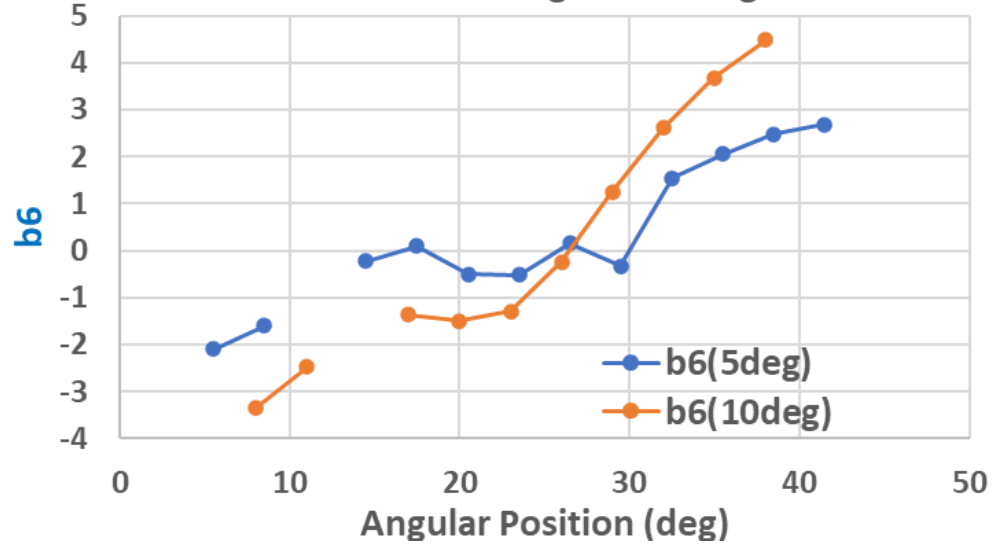
Harmonics from 10 degrees Tuning Shims



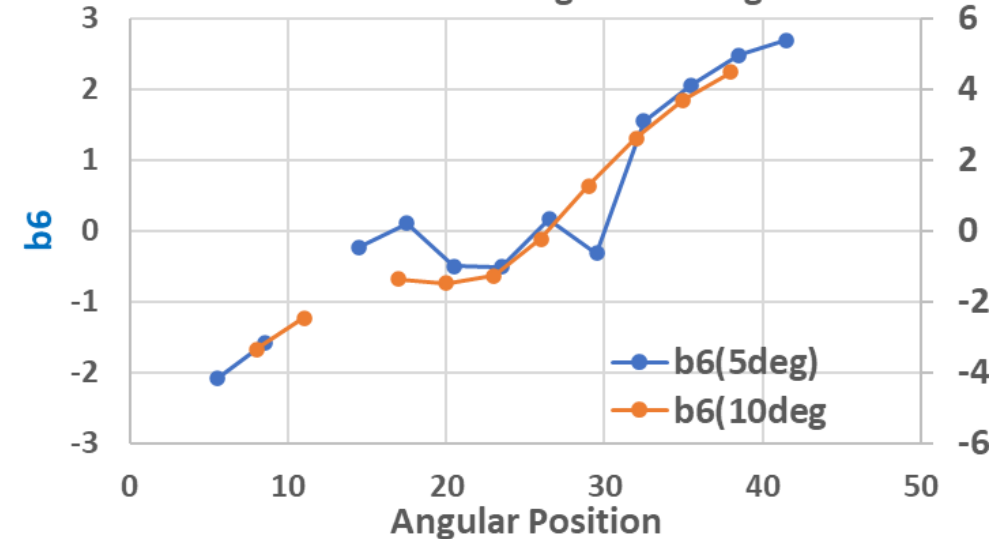
Tuning of b_6 with 5° and 10° shims



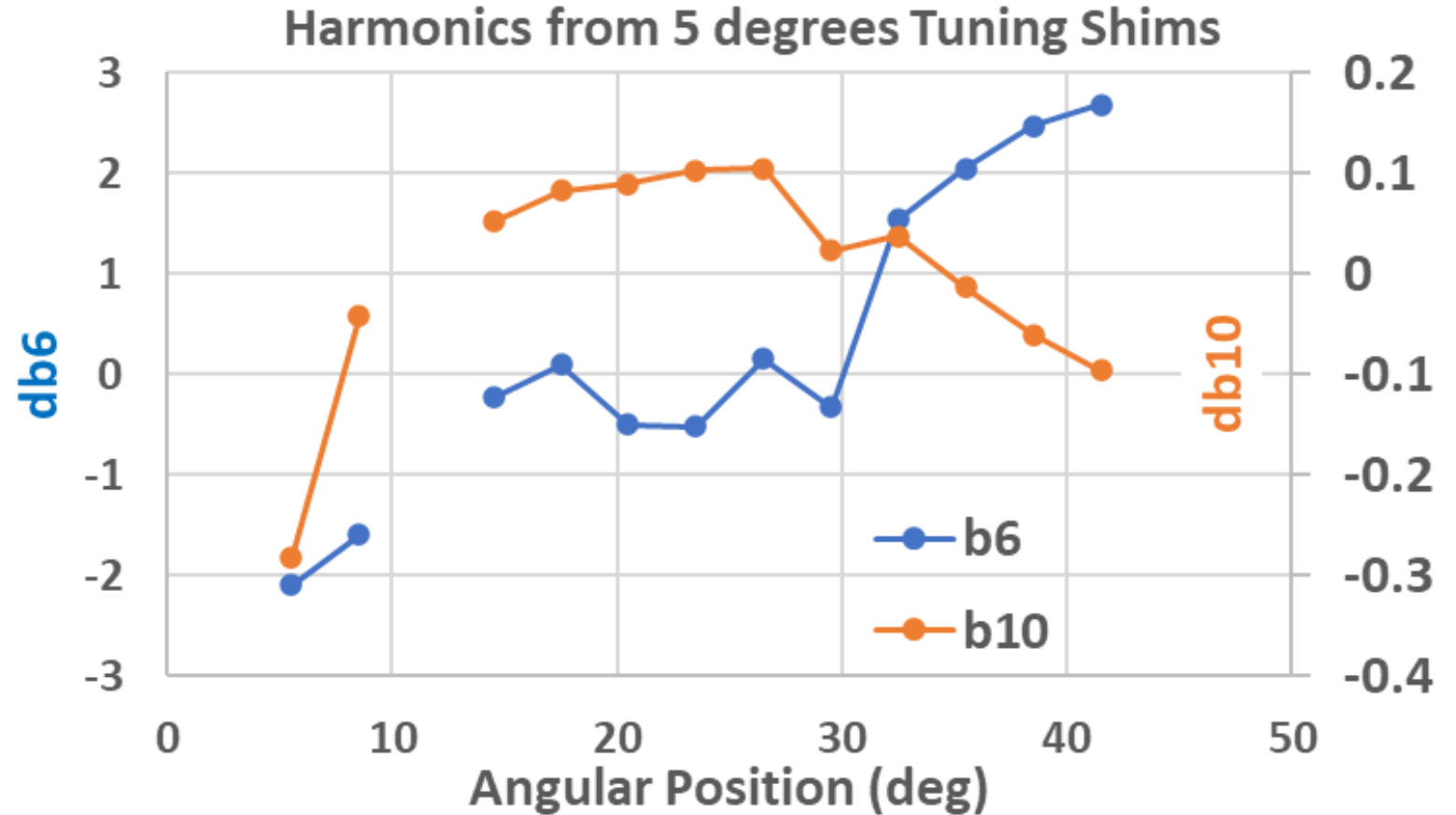
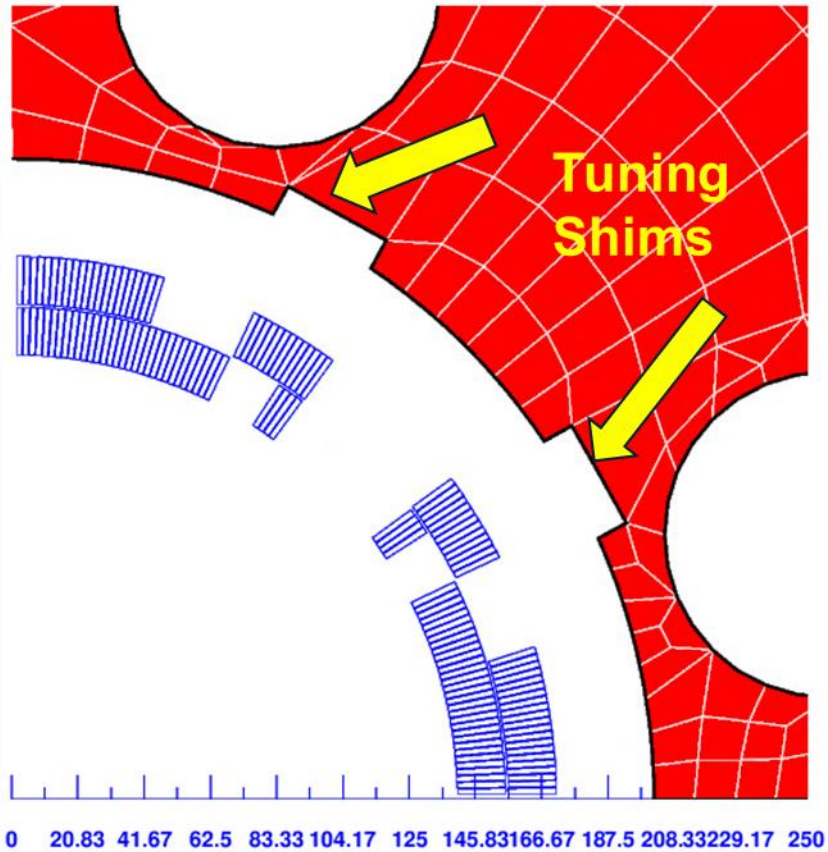
Harmonics from 5 degrees Tuning Shims



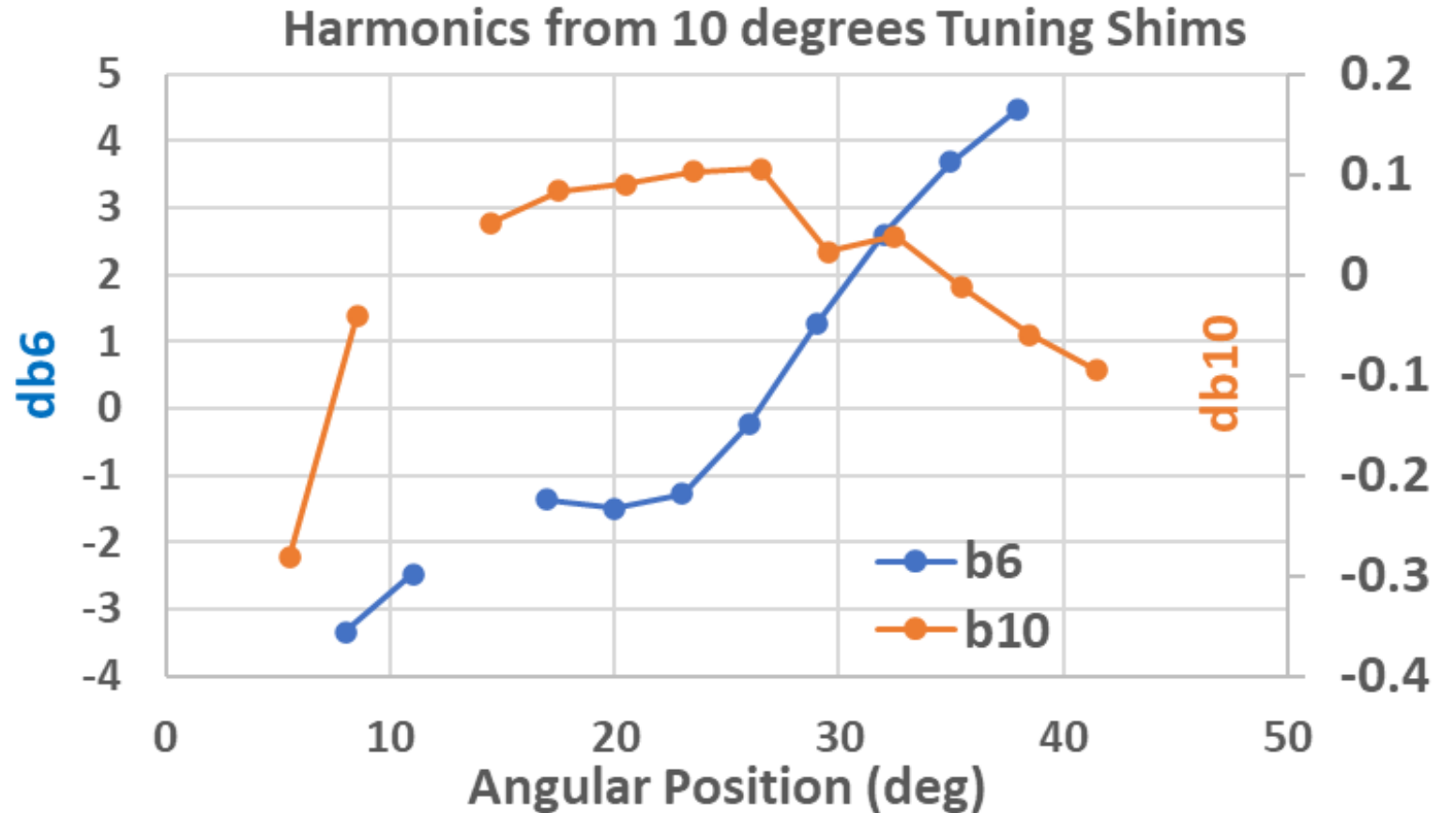
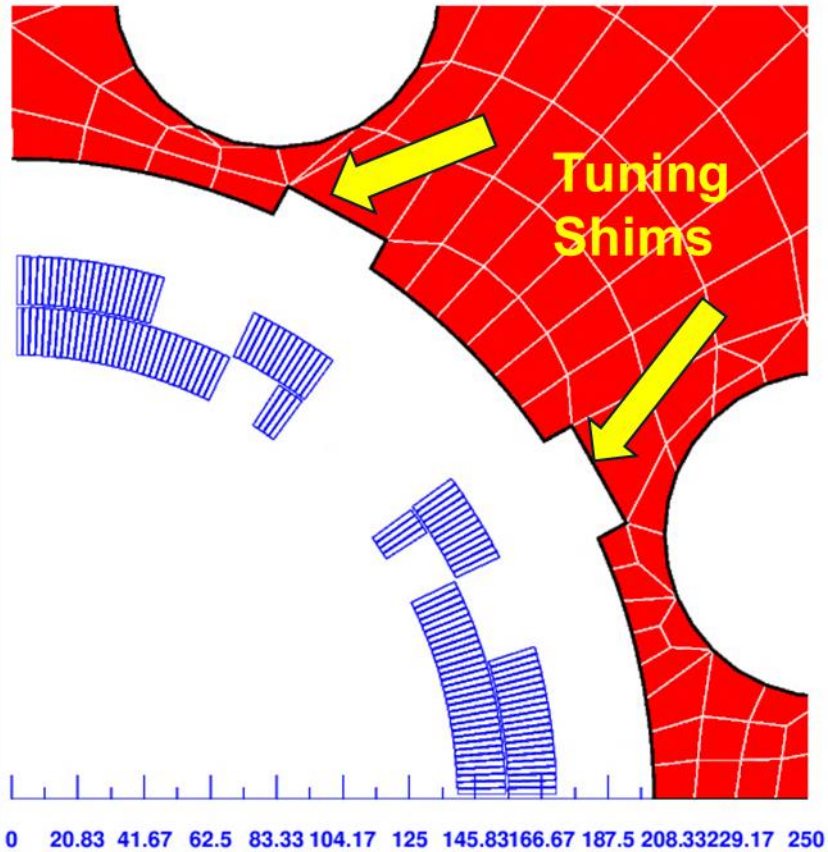
Harmonics from 5 degrees Tuning Shims



Tuning of b_6 and b_{10} with 5° shims



Tuning of b_6 and b_{10} with 10° shims



Tuning of b_{10} with 5° and 10° shims

