

Change in Nomenclature for the Main Injector

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A new naming scheme for the MI 17 lattice has been adopted. While we have all come to know and love the old nomenclature, I fear some long term ramifications of trying to retain that scheme, having to do primarily with naming quadrupole locations and placing those names in applications programs. Trying to fit eight lists of widely varying lengths into page formats is close to unworkable. The new scheme is based on the six-fold near-symmetry imposed by the power supplies. Many of the present applications programs will be very easily adapted from the Main Ring, with its six-fold symmetry.

The basic layout is as follows: there are six "sectors", designated by the service building name which lies near the first quadrupole of the sector. The six power-supply service buildings and the associated straight section (if any) are listed below, along with the "old" name in parentheses.

Service Buildings		
MI-10	Proton injection	(MI-10)
MI-20	Middle of long arc	(MI-13)
MI-30	Long straight opposite rf str.	(MI-30)
MI-40	Proton abort	(MI-50)
MI-50	Middle of long arc	(MI-53)
MI-60	Rf straight	(MI-70)

The straight sections are given in the following list:

Straight Sections		
MI-10	Proton injection	(MI-10)
MI-22	Unused	(MI-20)
MI-30	Unused	(MI-30)
MI-32	Unused	(MI-40)
MI-40	Proton abort	(MI-50)
MI-52	Proton extraction	(MI-60)
MI-60	RF	(MI-70)
MI-62	Pbar extraction	(MI-80)

Straight sections MI-52 and MI-62 will have kicker buildings associated with them.

All F-quads are even-numbered, all D-quads odd-numbered.

Numbering begins in a straight section and continues counter-clockwise to the next straight section. To adhere to the above, the quad names 200, 300, 500 and 600 don't exist; those sectors begin with (defocussing quads) 201, 301, 501 and 601.

Kickers are located adjacent to quads 104 (proton inj.), 400 (abort), 520 (proton ext.), and 622 (pbar ext.) The kickers at 104 and 622 are located upstream (for protons) of the quad, and downstream at quads 400 and 520. Lambertsons are at quads 102, 402, 522 and 620. THE PROTON INJECTION LOCATION MAY CHANGE BY ONE HALF-CELL IF WE CHANGE TO HORIZONTAL LAMBERTSONS/VERTICAL KICKERS, WHICH IS PRESENTLY UNDER CONSIDERATION. IF WE DO CHANGE, THE LAMBERTSON WILL BE AT QUAD 101, AND THE KICKER AT 103.

The term MI-10 (MI-30, MI-40, MI-60) will be used to designate both the service building, the straight-section as a whole, and the point at the center of the straight, in this case, the middle of quad 102 (305, 402, 605). The straight section name MI-22 (MI-32, MI-52, MI-62) also refers to the point at its center, half-way between quads 221 and 222 (320/321, 521/522, 620/621).

Focussing quad locations: (number per sector)

	(16)	(16)	(20)	(16)	(16)	(20)
	100			400		
	102	202	302	402	502	602
	104	204	304	404	504	604

	130	230	330	430	530	630
		232	332		532	632
			334			634
			336			636
			338			638
			340			640

Defocussing quad locations: (number per sector)

	(15)	(16)	(21)	(15)	(16)	(21)
	101	201	301	401	501	601
	103	203	303	403	503	603
	105	205	305	405	505	605

	129	229	329	429	529	629
		231	331		531	631
			333			633
			335			635
			337			637
			339			639
			341			641

