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A REFINEMENT TO THE A/B RING LATTICE

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A modification to the A/B ring lattice[1] which gives somewhat better characteristics is proposed. The new lattice has the same tune as the old lattice, but it has better behavior for half integer resonance at 4.5. The main difference is that the new lattice has 16 cells (32 half cells) and every fourth half cell has a long straight section. This can be compared to the old 18 cells (36 half cells) with every other half cell having a long straight section. There are only eight straight sections compared to 18, however, they are somewhat longer than the old straight section. Table I gives the results of the thin lens calculation for this lattice.

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[1] BNL Informal Report 32949

TABLE I

	Old	New
Circumference	134.52 m	134.52 m
Periodicity	18	8
Number of Cells	18	16
Number of Straight Sections	18	8
Cell Length	7.473 m	8.406 m
Straight Section Length	3.24 m	3.7 m
Phase Advance/Cell	94°	106°
$\nu_x \sim \nu_y$	~ 4.7	~ 4.7
β_{max}/β_{min}	12/2 m	16/2 m
η_{max}	2 m	2.4 m
Dipoles		
Number	18	24
Length	1.9 m	2.4 m
Gap	3.25"	3.25"
Field (Inj/@ 1 GeV)	3.73/9.82 kG	2.34/6 kG
Quadrupoles		
Number	36	32
Length	20"	20"
Aperture	8"	8"
Pole Tip Field (Inj/@ 1 GeV)	1.4/3.75 kG	1.6/4.2 kG

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