SSC DETECTOR SOLENOID DESIGN NOTE #17

TITLE: Self and Mutual Inductances of 9-m Diameter Coil Modules

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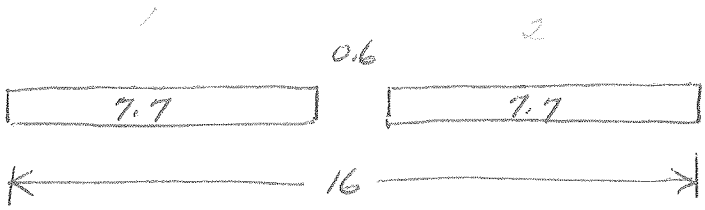
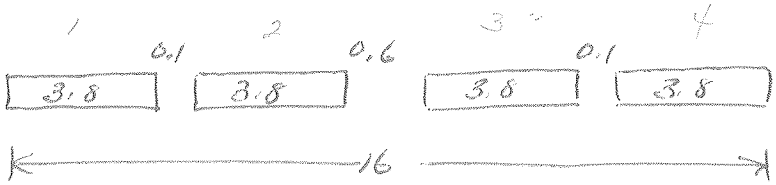
1. TWO COILS



$a = 7.7, \quad b = 0.6, \quad c = 16, \quad d = 9 \text{ m}$

2. FOUR COILS

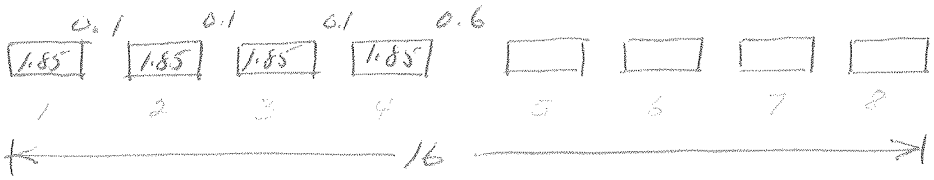


$a = 3.8, \quad d = 4 \text{ m}$

$b = 0.1, \quad 4.5, \quad 8.4 \text{ m}$

$c = 7.7, \quad 12.1, \quad 16.0 \text{ m}$

3. EIGHT COILS



MUTUAL INDUCTANCE

d = coil diameter = 9.0m

EIGHT COILS

	1	2	3	4	5	6	7	8
1	5.75	3.07	1.15	[illegible]	0.33	0.20	0.136	0.094
2	3.07	5.75	3.07	1.15	[illegible]	0.33	0.20	0.136
3	1.15	3.07	5.75	3.07	[illegible]	[illegible]	0.33	0.20
4	0.32	[illegible]	3.07	5.75	3.07	[illegible]	[illegible]	0.33
5	0.32	0.62	[illegible]	3.07	5.75	3.07	[illegible]	[illegible]
6	0.20	0.33	0.62	[illegible]	3.07	5.75	3.07	[illegible]
7	0.136	0.20	0.33	0.62	[illegible]	[illegible]	5.75	[illegible]
8	0.094	0.136	0.20	0.33	0.62	[illegible]	[illegible]	5.75

FOUR COILS

18.1	[illegible]	1.41	2.60
[illegible]	18.1	[illegible]	1.41
[illegible]	[illegible]	18.1	[illegible]
[illegible]	1.41	[illegible]	18.1

EIGHT COILS

49.6	[illegible]
[illegible]	49.6