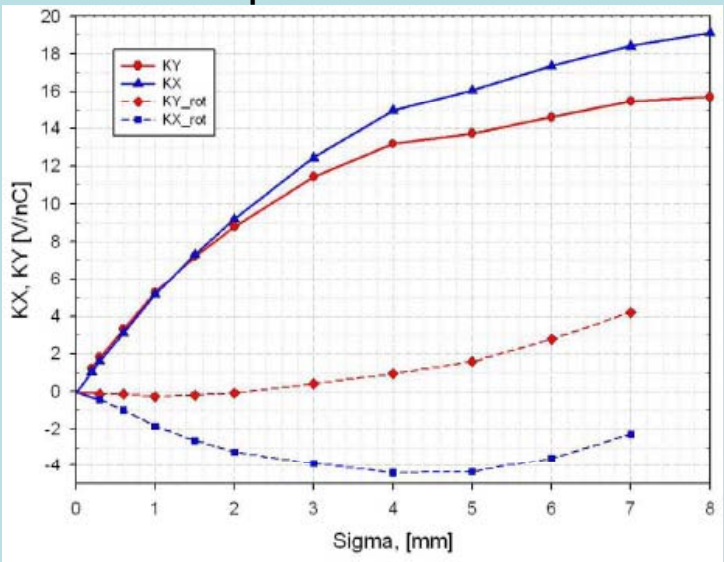
RTML upgrade
Aug.2008

N.Solyak

Coupler's RF-Kick and Wakefields PLACET Simulations

in ML, BC1 and BC2

Coupler transverse kick



Summary tables and conclusions

RF-Kick + Wakes

	BC1		BC2			ML		
	old	new	old	new	alt	old	new	alt
no correction	21.55	115.88	24.89	7430.1	1991.2	91.53	7425.25	654.6
1-to-1 correction	21.20	35.03	20.95	73.06	42.68	26.8	31.63	20.96
1-to-1 disp free	20.40	35.03	20.95	65.59	39.08	26.6	23.26	20.26

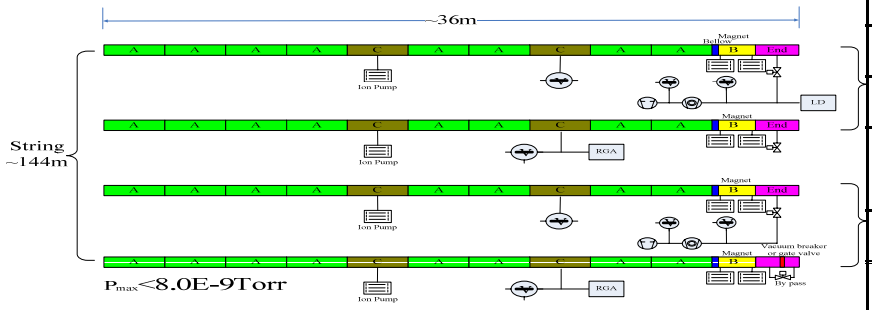
- Old configuration works better in BC1 and BC2
- Alternate configuration works better in ML

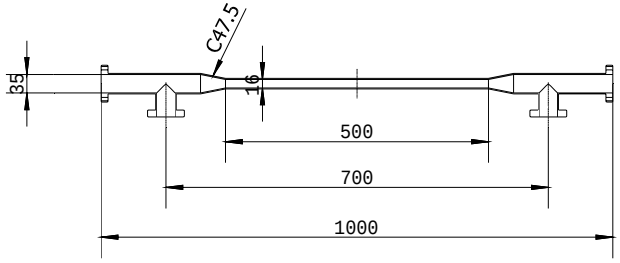
Re-evaluation of the vacuum system in RTML return Line (Report of Xiao Qiong /IHEP China)

Tight vacuum requirements ~20 nTorr

Two options considered:

- Non-passivated tubes
- Passivated vacuum tubes





Duct B

	Quantity	Unit Cost (US $)	Cost (US $)
For not passivated pipes			
35mm ID passivated pipe(including flanges)	13712 m	220	3,016,640
0.04 m^3/s Ion Pump with the port for it (including controller)	4888	700	3,421,600
		In Total	6,438,240
Common Part			
Bellow (ICF70)	376	250	94,000
Rough Pump Unit (including controller)	188	17000	3196,000
Manifold for gauges (6 ports, ICF70)	188	280	52,640
L-angle Valve for rough pumping (ICF70)	282	550	155,100
Gate Valve (ICF114)	47	7,000	329,000
Interlock box (per 1 GV)	47	500	23,500
Vacuum breaker with by-pass valve	47	?	?
3 Cold gauges with 1 controller	126	3000	378,000
RGA	188	9000	1,692,000
He LD	94	?	?
Duct Support (1 per chamber)	4512	400	1,804,800
Gasket (ICF70 in average)	20000	7	140,000
Bolt,Nut (6 in average)	80000	0.3	24,000

Plans for Sept. 2008

- Single stage Bunch compressor design
- Effect of tapered beam pipe in Return Line
- Conceptual design of the RTML in “minimum machine” scenario