

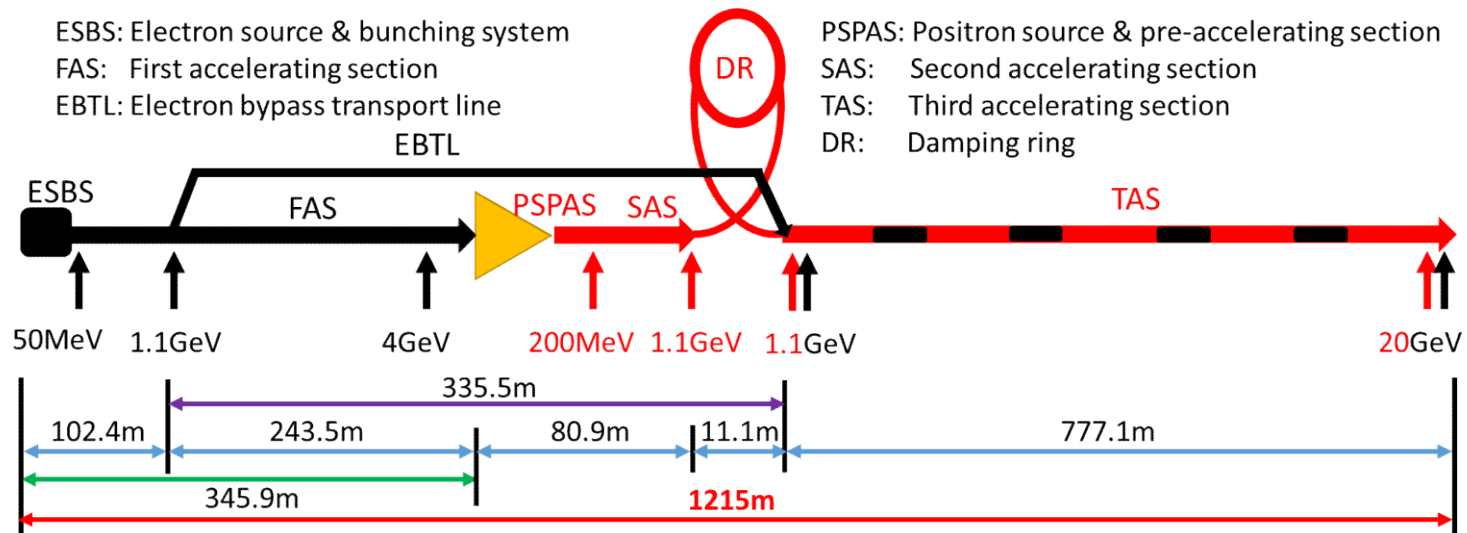
# Near future plan for the potential tryout of C3 acceleration gradient

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# Baseline (20GeV)

- From start to end: 1.215 meters long
- S band 4 GeV
- C band from 1.1 GeV after DR to 20 GeV



# Klystron & accelerating structure

- 50MW
  - Klystron: 146 (no change)
  - Acc: 292(C-travelling wave)

Parameters		units	Baseline	High-Z	
Repetition rate		Hz	100	200	
s-band klystron && accelerating structure	RF frequency	MHz	2860		
	Kly. Quantity		35		
	Max. power	MW	80		
	pulse width	μs	4		
	Average power	kW	32	64	
	efficiency	%			
	Gradient	1-t-2 Norm. Acc	MV/m	27	
		1-t-2 LA. Acc		22	
		1-t-4 Norm. Acc		21	
	Acc. Quantity		111		
C-band klystron && accelerating structure	RF frequency	MHz	5720		
	quantity		146		
	Max. power	MW	50		
	pulse width	μs	3		
	Average power		15	30	
	efficiency	%			
	Gradient	1-t-2 Norm. Acc	MV/m	45	
	Acc. Quantity			292	

# Klystron & accelerating structure

- 80MW
  - Klystron:  $146/2=73$
  - Acc: 146 (数量减半) (90~100MV/m)
  - The length of the linac C-band will be half

Parameters		units	Baseline	High-Z	
Repetition rate		Hz	100	200	
s-band klystron && accelerating structure	RF frequency	MHz	2860		
	Kly. Quantity		35		
	Max. power	MW	80		
	pulse width	$\mu$ s	4		
	Average power	kW	32	64	
	efficiency	%			
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C-band klystron && accelerating structure	RF frequency	MHz	5720		
	quantity		146		
	Max. power	MW	50		
	pulse width	$\mu$ s	3		
	Average power		15	30	
	efficiency	%			
	Gradient	1-t-2 Norm. Acc	MV/m	45	
	Acc. Quantity			292	

# Future plan

- 优化不同束流孔径的结构，和物理一同检查可能会遇到的问题，以及适合CEPC和FEL的腔的参数
- 设计出机械图纸
- 和厂家协商做一段实验腔，验证Q值、加工精度及检验机械设计是否合理
- 重新修改加工工艺，加工实验腔

Thank you for your attention!