近期工作

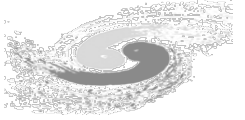- 电子学间需求在CEPC Day上汇报，主要反馈：
  - 最后确定电子学间为500平米两层，比1.5倍裕量的20m×32m两层略砍掉一些，但是应在我们可接受范围内
  - 每层层高需要进一步确定，需要整体考虑
  - 不满意当前电源机箱利用率，要求压缩机箱资源—方案讨论
  - Muon资源要大幅度压减，但Muon方案至今不明，应督促Muon系统尽快给出设计方案
  - 建议进一步组织无线传输方案研讨，加快研发进度，CERN方面已在布局
- 在电子学间的计算过程中，各子探测器最新数据相关情况已更新至表格，目前仍缺少数探测器的本底估算和Muon的细节设计
  - Ref-TDR评审时建议不展示数据位宽的具体组成，等待FEE ASIC方案细化以及统一标准
    - ➢ BX、Chip ID相关位数涉及到整体读出方案，各子探测器应该汇总

	Vertex	Pix(ITKB)	Strip (ITKE)	OTKB	OTKE	TPC	ECAL-B	ECAL-E	HCAL-B	HCAL-E	Muon
Channels per chip	512*1024 Pixelized	512*128	1024	128		128	8~16 @common SiPM ASIC				
Ref. Signal processing	XY addr + BX ID	XY addr + timing	Hit + TOT + timing	ADC+TDC/TOT+TOA		ADC + BX ID	TOT + TOA/ ADC + TDC				
Data Width /hit	32bit (10b X+ 9b Y + 8b BX + 5b chip ID)	42bit （9b X+7b Y +14b BX + 6b TOT + 5TDC + 1b polarity）	32bit (10b chn ID + 10b BX + 6b TOT + 5b chip ID)	40~48bit （7b chn ID + 8b BX + 9b TOT + 7b TOA+5b chip ID)		48bit (7b chn ID + 8b BX + 11b chip ID + 12b ADC + 10b TOA)	48bit (8b BX+ 10b ADC + 2b range + 9b TOT + 7b TOA+ 4b chn ID + 8b chip ID)				
Max Data rate / chip	2Gbps/chip@Triggerless@Low LumiZ Innermost	Avg. 3.53Mbps/chip Max. 68.9Mbps/chip	Avg. 21.5Mbps/chip Max. 100.8MHz/chip	Avg：2.9Mbps/chip Max：3.85Mbps/chip	Avg：38.8Mbps/chip Max：452.7Mbps/chip	~70Mbps/ module Inmost	~9.6Gbps/module @dual-end readout	Needs bkgrd rate	Needs bkgrd rate	Needs bkgrd rate	Needs bkgrd rate
Data aggregation	10~20:1, @2Gbps	14:1@O(100Mbps)	22:1 @O(100Mbps)	i. 22:1 @O(5Mbps) ii. 7:1 @O(100Mbps)	i. 22:1 @O(50Mbps) ii. 10:1 @O(500Mbps)	1. 279:1 FEE-0 2. 4:1 Module	i. 4~5:1 side ii. 7*4 / 14*4 back brd @ O(100Mbps)	Needs detector finalization	< 10:1 (40cm*40cm PCB – 4cm*4cm tile – 16chn ASIC)	Needs detector finalization	Needs detector finalization
Detector Channel/module	1882 chips @Stch &Ladder	30,856 chips 2204 modules	23008 chips 1696 modules	83160 chips 3780 modules	11520 chips 720 modules	492 Module	0.96M chn ~60000 chips 480 modules	Needs detector finalization	3.38M chn 5536 aggregation board	2.24M chn 1536 Aggregation board	Needs detector finalization
Avg Data Vol before trigger	474.2Gbps	101.7Gbps	298.8Gbps	249.1Gbps	27.9Gbps	34.4Gbps	4.6Tbps (needs finalization)	Needs det & bkgrd finalization	Needs det & bkgrd finalization	Needs det & bkgrd finalization	Needs det & bkgrd finalization