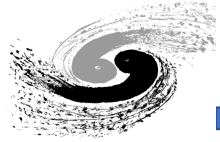


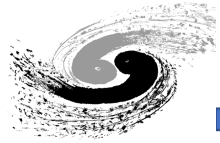
2024.9.10



Status – Beam Induced Backgrounds



- The simulation will be performed by MDI group, and analysis will be done by sub-detector on noise(data rate), and by MDI on radiation level estimation.
 - Regular Meeting on Monday.
 - Vertex by Hanceng Lu
 - Silicon Tracker by Zhan Li and Dian Yu
 - TPC by Xin She and Jinxian Zhang
 - ECal by Weizheng Song and Fangyi Guo
 - LumiCal by Renjie Ma and Yilun Wang
- Currently, the simulation based on last version of Geometry:
 - VXD/ITK/OTK/Muon doesn't have the latest version.
- Working Priority:
 - Higgs \rightarrow Z \rightarrow W \rightarrow ttbar

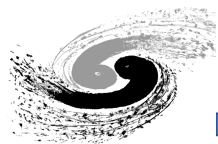


Status – Beam Induced Backgrounds



- The BG simulation on Higgs mode has been done, with following options:
 - Geometry based on TDR_o1_v01(date: 2024-08-14), with some modification
 - Accelerator Beampipe changed to Tungsten
 - Coolant of central beampipe changed to Water
 - Remove the tungsten shielding outside the Cryo-module
 - Including the following BG sources:

		50MW Higgs, 355ns/BX
Luminosity Related	Pair Production	~1300/BX
Single Beam	Beam Thermal Photon	~0.36MHz/beam in IR
	Beam Gas Bremsstrahlung	~0.04MHz/beam in IR
	Beam Gas Coulomb	~0.24MHz/beam in IR



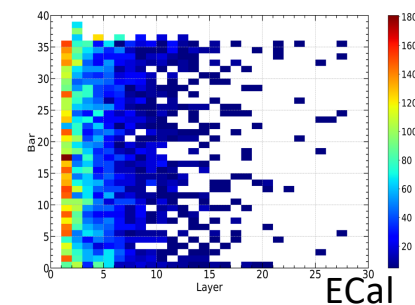
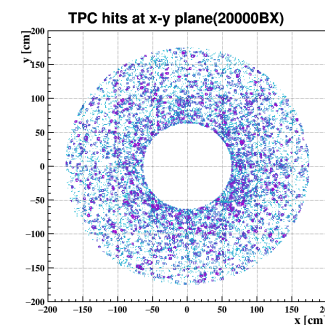
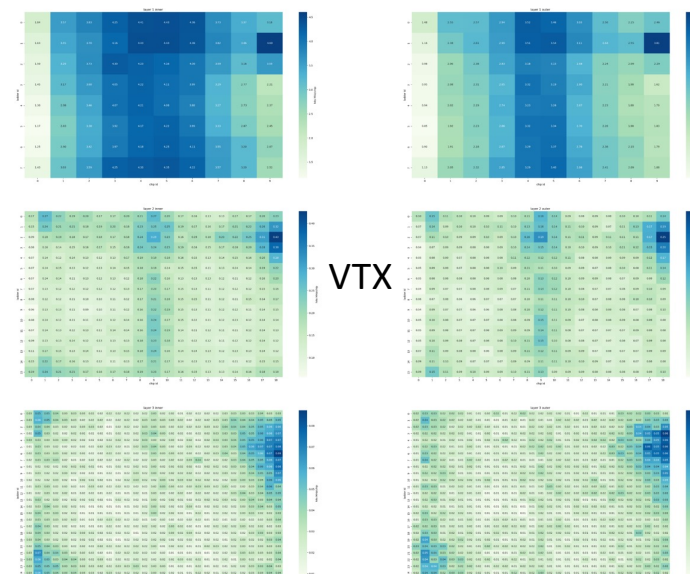
Status – Beam Induced Backgrounds

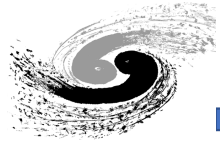


- Preliminary Results of Higgs mode is acceptable by sub-Ds:

Detector	Layer	Inner/outer	M hit rate MHz/chip	M hit density MHz/cm ²
Vertex	1	i	4.604	1.405
		o	3.808	1.162
	2	i	0.427	0.130
		o	0.247	0.075
	3	i	0.087	0.027
		o	0.062	0.019
TPC				0.08
ECal	Barrel	/	0.3/bar(1MeV thd)	/
	EndCup	/	0.2/bar(1MeV thd)	/

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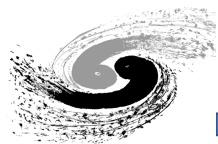


Status – Beam Induced Backgrounds



- The BG simulation on Z mode has been done, with following options:
 - Geometry based on TDR_o1_v01(date: 2024-08-14), with some modification
 - Accelerator Beampipe changed to Tungsten
 - Coolant of central beampipe changed to Water
 - Remove the tungsten shielding outside the Cryo-module
 - Magnetic Field changed to 2T
 - Including the following BG sources(Single Beam only):

		50MW Z, 23ns/BX
Luminosity Related	Pair Production	--
Single Beam	Beam Thermal Photon	~264 MHz/beam in IR
	Beam Gas Bremsstrahlung	~19 MHz/beam in IR
	Beam Gas Coulomb	~2.4 GHz/beam in IR
	Touschek	~6.3 GHz/beam in IR



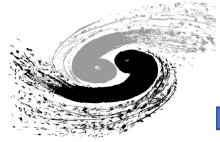
Status – Beam Induced Backgrounds



- Preliminary Results of Z mode is not acceptable by almost all sub-Ds:
 - Optimization on Collimators is on going.

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Detector	Layer	Inner/outer	M hit rate MHz/chip	M hit density MHz/cm ²
Vertex	1	i	201.194	61.399
		o	205.146	62.606
	2	i	216.668	66.122
		o	199.824	60.982
	3	i	95.495	29.143
		o	75.202	22.950
TPC			/	/
ECal	Barrel	/	30/bar(1MeV thd)	/
	EndCup	/	40/bar(1MeV thd)	/



Status -- LumiCal



- LumiCal
 - Discussion on the proposal to use LGAD as Silicon Part

