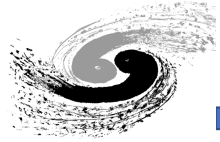


Status of MDI Part of Ref-TDR of CEPC Detector

2024

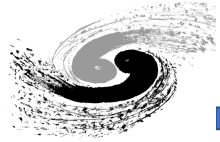
2024.5.28



Status – Beam Induced Backgrounds



- Current Status towards Second Version(Based on CEPCSW):
 - Input file(from generator or tracking tool) converted to ROOT format
 - Get Hit distribution and Dose distribution at same time
 - Hit in ROOT file, could be processed directly by detector designers and/or MDI group
 - Dose in TXT file currently, will be processed by MDI group
 - Very time consuming, 10min/particle with full detector
 - Almost ready to proceed mass production, however still have some small difficulties

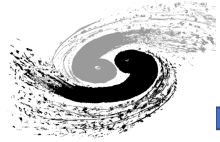


Status – Beam Induced Backgrounds



- Current Status towards Second Version(Based on CEPCSW):

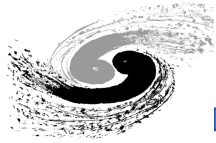
Background	Mode	Generation	Tracking	Noise Estimation	Rad. Da. Esti.	Rad. Env. Esti.
Synchrotron Radiation	Higgs	To do	To do	To do	To do	To do
	Z	To do	To do	To do	To do	To do
Beamstrahlung/Pair Production	Higgs	Done	-	Mass Checking	To do	To do
	Z	Done	-	To do	To do	To do
Beam-Thermal Photon	Higgs	Done	Done w.o. Sol	To do	To do	To do
	Z	Done	Done w.o. Sol	To do	To do	To do
Beam-Gas Bremsstrahlung	Higgs	Done	Done w.o. Sol	Mass Production	Mass Checking	Mass Checking
	Z	Done	Done w.o. Sol	To do	To do	To do
Beam-Gas Coulomb	Higgs	Done	Done w.o. Sol	To do	To do	To do
	Z	Done	Done w.o. Sol	To do	To do	To do
Radiative Bhabha	Higgs	Done	-	To do	To do	To do
	Z	Doing	-	To do	To do	To do
Touschek	Higgs	Doing	To do	To do	To do	To do
	Z	Done	Done w.o. Sol	To do	To do	To do



Status – LumiCal



- Regular Meeting: Tuesday afternoon.
- The design of Ref-TDR LumiCal are finishing as [presented yesterday](#). A few details needed to be updated:
 - The full simulation based on CEPCSW.
 - Mechanical Design and Integration.
 - The methods of Survey.
 - Benchmark(Beam Test) of Geant4 Simulation.
 - Backgrounds estimation/affects on other detectors.



Status – Overall design/optimization of IR



- A regular meeting with acc. People will be held at Thursday morning, minutes Link: [CEPC MDI Meeting - HedgeDoc \(ihep.ac.cn\)](https://ihep.ac.cn/HedgeDoc/CEPCMDIMeeting)
- The work on component design optimization is on going:
 - The Re-design of Cryo-Module has been started.
- The overall distribution of magnet field will be presented after the design of the solenoid and also the re-design of the anti-solenoid.
 - The magnetic field of the Solenoid has been presented.
 - The re-design of the anti-solenoid has been started.
 - The joint effort will begin when the anti-solenoid design finished.
- Hope to finish a preliminary stable version before the End of August