

## **CEPC Gaseous Track Detector**

Huirong Qi and Linghui Wu
On behalf the gaseous track group



## **Ch06: Revised Content Following IDRC Review**

Chapter	6 Gas	seous Tracker
6.1	Physics	s requirements
6.2	Overvi	ew and technology choices
	6.2.1	Technology comparison
	6.2.2	Baseline gaseous tracker
	6.2.3	R&D efforts and results
6.3	6.3 Pixelated readout Time Projection Chamber	
	6.3.1	Time Projection Chamber detector
	6.3.2	Design of the pixelated readout TPC
	6.3.3	Simulation of the pixelated readout TPC
	6.3.4	Beam background estimation and calibration
	6.3.5	Challenges and critical R&D
6.4	6.4 Performance	
	6.4.1	Overview of TPC simulation study
	6.4.2	Spatial resolution
	6.4.3	Tracker reconstruction
	6.4.4	Particle identification
6.5	Costs	
6.6	Prospe	cts and outlook



Chapter	6 Pix	elated Time Projection Chamber	
6.1	Overview		
6.2	Detailed Design		
	6.2.1	Chamber and field-cage	
	6.2.2	Endplate and readout modules	
	6.2.3	Pixelated readout electronics	
	6.2.4	Design of the operation gases inlets and outlets .	
	6.2.5	Design of mechanics and cooling	
	6.2.6	R&D efforts and results	
6.3	Key technologies to address challenges		
	6.3.1	Challenges and critical R&D	
	6.3.2	Beam background estimation	
	6.3.3	Calibration and alignment	
6.4	Alternative Solutions		
	6.4.1	Alternative DC for particle identification	
	6.4.2	Simulation and reconstruction	
	6.4.3	Particle identification performances	
6.5	Simulation and Performance		
	6.5.1	TPC simulation framework	
	6.5.2	Simulation and digitization of TPC	
	6.5.3	Spatial resolution and momentum resolution	
	6.5.4	Particle identification	
6.6	Summary and Future Plan		
6.7	Costs		