

Chapter 06

Finalized Content:

Less than 40 pages

Chapter 6 Pixelated 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	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	