

## 5 Drift Chamber

**grand-total: 53-57 pages**

- 5.1 Overview **GF + MR** (12 pages total)
  - Physics requirements and performance goals (3 pages)
  - Geometrical constraints (1 page)
  - Machine background considerations (2 pages)
  - DCH design overview (2 pages)
  - Expected performance (2 pages)
  - **Discussion of tracking SW/pattern recognition issues?** (2 pages)
  
- 5.2 Optimization of chamber operation (5 pages?)
  - Cluster counting
  - Optimization of gas choice
    - o physics performance considerations
    - o aging studies: fields, gas gain
  
- 5.3 Mechanical Design (6-8 pages total)
  - endplates
  - inner cylinder
  - outer cylinder
  - cell structure
  - choice of wire and electrostatic stability
  - Feed-through design (**here or in 5.4**)
  - Endplate systems (cooling/mechanical for electronics)
  - **Stringing**
  
- 5.4 Electronics design (8 pages total)
  - basic approach: constraints of cluster counting
  - routing of analog signal cables
  - preamplifiers and service cards
  - collector cards
  - digitization cards and crates
  
- 5.5 High voltage system (2 pages total)
  - distribution and crates
  - routing and termination cards
  
- 5.6 DCH in the Trigger *does this belong here?* (4 pages total)
  
- 5.7 Gas system (2 pages)
  
- 5.8 Calibration and monitoring
  - slow control systems (1 page)
  - calibration (1-2 pages)
  - monitoring (1 page)

## 5.9 Integration

(5-6 pages total)

- overall geometry and mechanical support
- cable routing
- access
- gas system integration
- digitization electronics crates integration
- high voltage system integration
- installation and alignment

## 5.10 R&D Program

(6 pages total)

- results
- plans