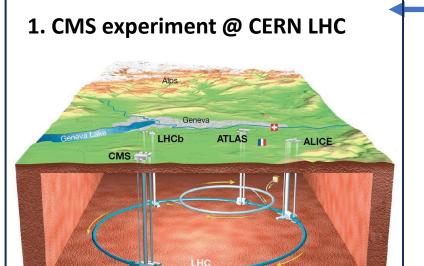
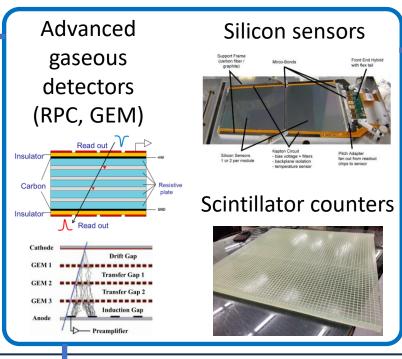
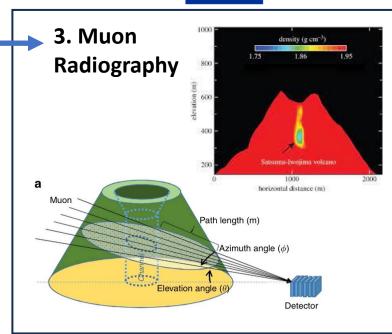
## Instrumentation in HEP and beyond

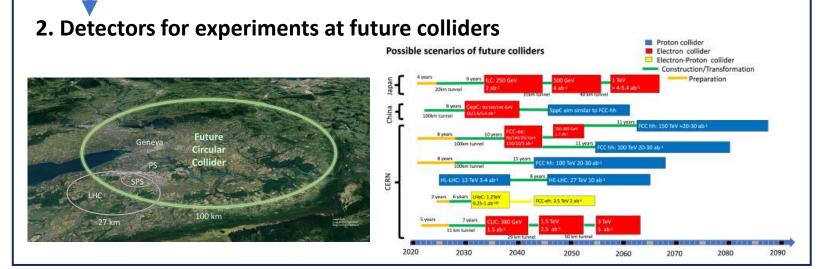












## **Instrumentation for CMS**

Wheel 1

Wheel 0

Solenoid magnet

**Tracker** 

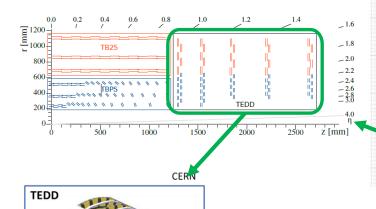
HCAL

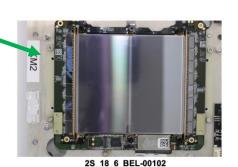
ECAL



#### **New Silicon Tracker**

Construction of 1 Outer Tracker Endcap @ VUB/UCLouvain







Steel

**GEM** 

Wheel 2

RB2

HGCAL

# **Gaseous Muon detector upgrade**

36.8°

**iRPC** 

CSCs

1.2 33.5°

1.3 30.5°

1.4 27.7°

1.5 25.2°

1.7 20.7° 1.8 18.8°

1.9 17.0°

2.0 15.4° 2.1 14.0°

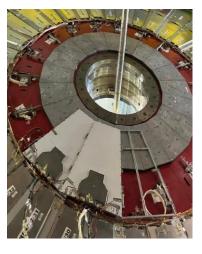
2.3 11.5°

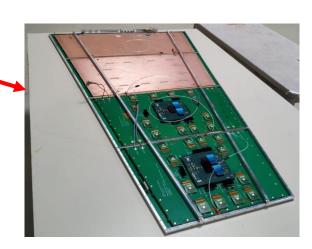
2.4 10.4°

2.8 7.0°

3.0 5.7°

4.0 2.1°





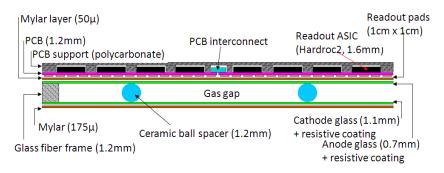
## **R&D** for Future Colliders

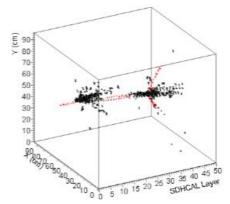


### R&D of high-granularity, gaseous detector based 5D calorimeter

#### Semi-digital HCAL (SDHCAL):

- sampling calorimeter with glass-RPC as active layers
- 5D: 3D space, energy & time





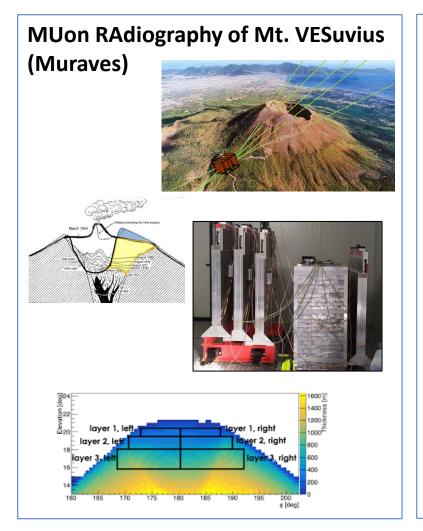


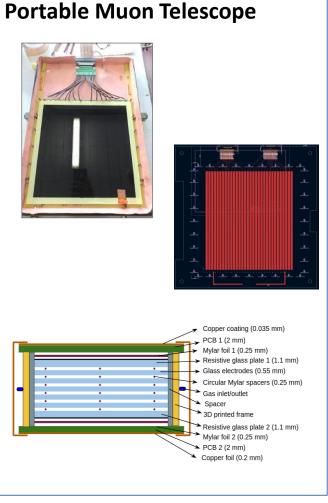
Michael Tytgat - March 12, 2024

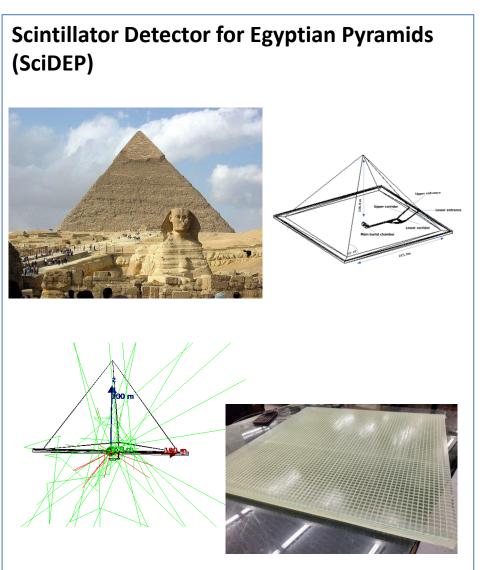
# **Muon Radiography**

VRIJE UNIVERSITEIT BRUSSEL

R&D of muon telescopes, software and algorithms for muography applications in volcanology and archaeology







Michael Tytgat - March 12, 2024