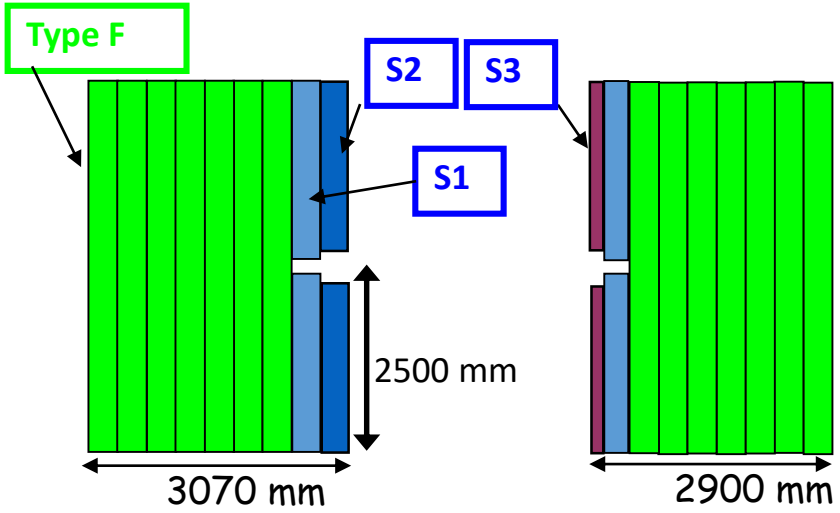
Task Force
OT CBM PANDA (Mtg. 6)
- News & Updates

LHCb OT straw modules

The Outer Tracker consists of 3 stations T1, T2, T3 (~0.5m apart)

- Station
  - 2 support frames (C-frames) mounted vertically
    each C-frame with 2 layers of detector modules
  - Station =► 4 layers of modules with orientation 0^0,$+5^0$,-5^0,0^0
  - Every C-frame is in two halves that can be moved
    horizontally in and out around the beam pipe
- Layer
  - 14 type F modules; full height
  - 4 type S modules; half height outside the hot region



LHCb Operating conditions (*)

CBM ?

LHCb	OT
Operating conditions	
Total counting rate in the FT	50x10^7 tracks/s
Maximum counting rate per straw	5000 kHz
Maximum particle flux	200 kHz/cm^2
Maximum radiation dose in 10 years	
Maximum accumulated charge in 10 years	2.5 C/cm
Maximum current per straw	0.7 μA
Occupancy (at max. counting rate)	
Performance	
Discrimination threshold	4 fC
Position resolution per straw	180 μm
Momentum resolution (p range?)	0.4%

(*) Communications with N. Tuning (Nikhef/CERN)

Project: PASTA - PAnda STrAws

S1,S2,S3 modules in PANDA
@mCBM: Beam times 2025 started

Project: MUST - MUon Straws

F modules possibly in CBM
@Cave-C: Beam tests 2026/27

OT related projects

- **PASTA** – **PA**nda **ST**rAws
- → Reuse of OT S modules for charged particle tracking in PANDA
  - GSI: A. Belias, R. Böhm, S. Koch, U. Kurilla, J. Lühning, K. Peters, L. Schmitt, L. Schramm
  - GSI: D. Emschermann, C. Pauly, C. Sturm, T. Galatyuk
  - GSI: R. Karabowicz
  - GSI: M. Traxler, S. Löchner, P. Zumbruch, B. Voss, H. Risch
  - JGU, Krakow: G. Korcyl, B. Sobol
  - Bose Inst., India: S. Chattopadhyay , Z. Ahammed , S. Chattopadhyay

- → Reuse LHCb electronics (ASDBLR ASIC) and controls
- → Beam times with mCBM (2025) and Student projects in DTL (2025)
- → Readout /DAQ options TRBNet, mCBM-DAQ, & new GSI developments

OT related projects

- **MUST – MU**on **ST**raws
- → reuse of OT F modules in MuCH stations in CBM prior to PANDA
- → Current Task Force with Members of CBM & PANDA
  to assess the feasibility of using OT straws based on simulations

- → Progress so far: No problems !!
  based on CBM simulations, feedback by LHCb and other experts

- → Steps ahead: Complete simulations and write-up recommendations.
- → Finalize discussions within CBM and within PANDA, by June 2025.
- → Towards a common project CBM-PANDA, by Q3/2025.