

Beam Tests 2018

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***BT2017 Analysis meeting
LAL, 30/11/2017***

DESY `end of spring`

2 weeks in June 2018 for the SiW-ECAL of ILD/CALICE.

The purpose is to complete the test of June 2017 DESY beam test in several directions:

- 1) Using a new compact structure allowing for 0 to 24 X0 of Tungsten and any number of sensor layer:
It will hold: (FEV are our PCB, SK2/SK2a ASICs)
 - the existing layers (7 working tested in 2017 + 3 to be repaired [FEV11 + 325 μ m Wafers + SK2])
 - 3 to 4 layers with improved design [FEV13 + 500 μ m & 650 μ m wafers + SK2a]
 - **up-to 5 new layers** to be produced in Kyushu (Japan) in close collaboration with industrial partner [FEV12-Jp + 650 μ m Wafers + SK2a]
 - **1 or 2 thin layers** with ASICs embedded in PCB [FEV11_COB + baby wafer + SK2a]
- 2) A **long structure (3.2m)** chaining 12 detector units, mounted on a support on wheel, to test the response of a long layer.

We would like to **test the structures with and without B** field as last year (so T24 would be perfect).

Additionally, if this is technically feasible, we would try photon generation by bremsstrahlung in a thin target before a dipole at distance from detector: this would be useful for separation studies, a key criteria of PFA.

The typical separation distance to be tried is up-to 5-6 cm.

It might then be useful to have a beam telescope at hand.

DESY schedule (v1, 2017-11-24)



DESY Test Beam Schedule 2018 - Version 1 24/11/2017

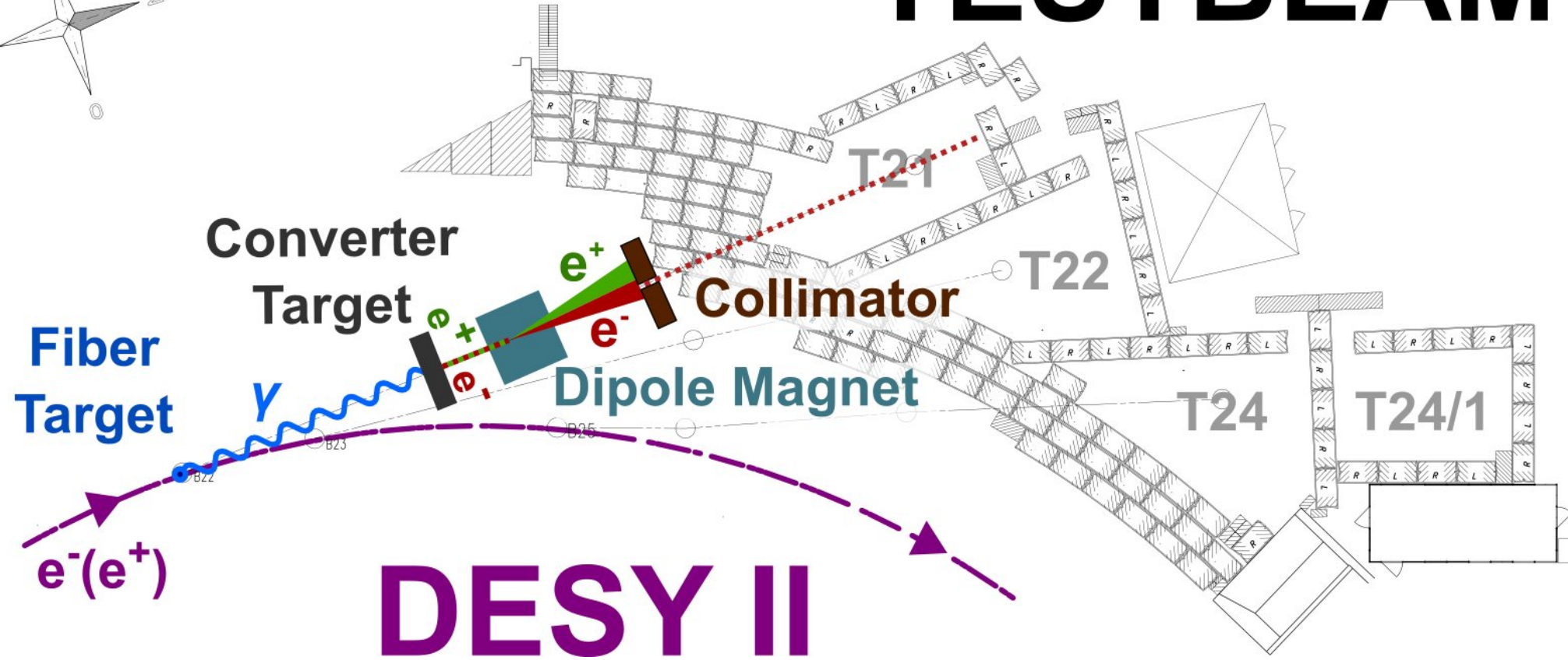
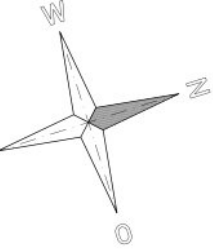


Ralf Diener, Norbert Meyners, Marcel Stanitzki - DESY Test Beam Coordinators

Week	TB21		TB22		TB24/1		TB24				
		DATURA		DURANTA	PCMAG	Telescope in PCMAG	none				
1-Jan-18	1		Shutdown								
8-Jan-18	2										
15-Jan-18	3										
22-Jan-18	4										
29-Jan-18	5										
5-Feb-18	6		Startup	Startup	Startup		Startup				
12-Feb-18	7	CMS-Pixel-Phase-2	X	X0-TBMST	X	Strip Telescope Installation	CALICE-AHCAL				
19-Feb-18	8	CMS-Pixel-Phase-2	X	ATLAS-OXF-HVCMOS	X						
26-Feb-18	9	ATLAS-Strip-Stress	X	ATLAS-OXF-HVCMOS	X		Mu3e-Tile				
5-Mar-18	10	CMS-Pixel-Phase-2	X	Mu3e	X						
12-Mar-18	11	CMS-Pixel-Phase-2	X	ATLAS-ITk-Pixel	X		CALICE-AHCAL				
19-Mar-18	12			ATLAS-ITk-Pixel	X						
26-Mar-18	13	CMS-HGCAL	X	ATLAS-ITk-Pixel	X						
2-Apr-18	14	ELAD	X								
9-Apr-18	15	CMS-OT-MaPSA	X								
16-Apr-18	16	CMS-OT-MaPSA	X								
23-Apr-18	17										
30-Apr-18	18	CMS-Pixel-Phase-2	X	ATLAS-Strip-Embed	X						
7-May-18	19										
14-May-18	20										
21-May-18	21										
28-May-18	22	ELAD	X								
4-Jun-18	23			Setup							
11-Jun-18	24	CMS-Pixel-Phase-2	X	ATLAS-ITk-Strips	X						
18-Jun-18	25	CMS-Pixel-Phase-2	X	ATLAS-ITk-Strips	X		NICA-MPD				
25-Jun-18	26	CMS-Pixel-Phase-2	X	ATLAS-ITk-Strips	X		NICA-MPD				
2-Jul-18	27	CALICE-SIW-ECAL	X	ATLAS-Strip-Stress	X	CALICE-SIW-ECAL					
9-Jul-18	28	X-Ray-Crystal-Rad		ATLAS-Strip-Embed	X						
16-Jul-18	29										
23-Jul-18	30			Summer Shutdown							
30-Jul-18	31										
6-Aug-18	32										
13-Aug-18	33	SummerStudents	X								

“occupied”
To be negotiated

Announced



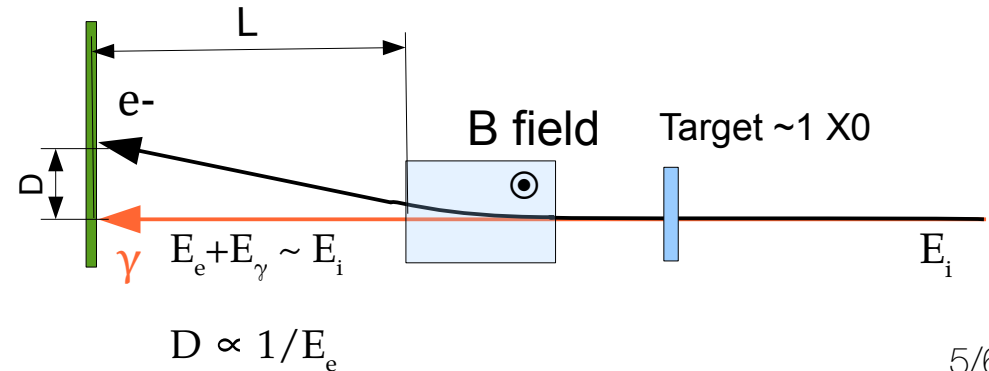
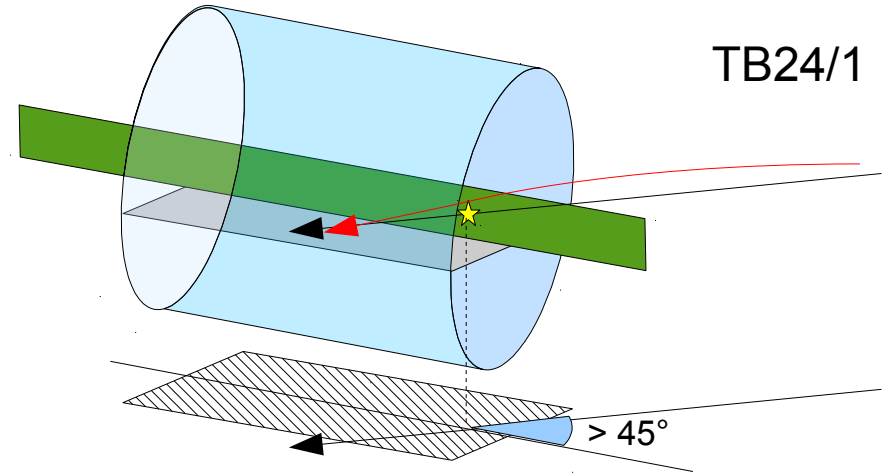
What can be improved wrt to 2017 ?

Long structure: TB24/1

- everything new.
- Can it be put in the B field.
 - Shoot through the magnet
 - Shoot at angle ?

Prototype → More layers: TB21

- Holding structure → ? readiness ?
 - 24 X0 whatever the number of active layers
 - ? Grounding ?
- electron shower program (E, angles) with simulation
- Separation studies : $\gamma + e \rightarrow$? Feasibility ?
 - → D for $E_e \sim E_\gamma$ in [1-5] cm \Rightarrow target, B, L
- Use of telescope ? → ? DAQ ?



CERN 2018

Posted the same demand as last year:

- very late beam with SDHCAL
- **DAQ integration ?**