

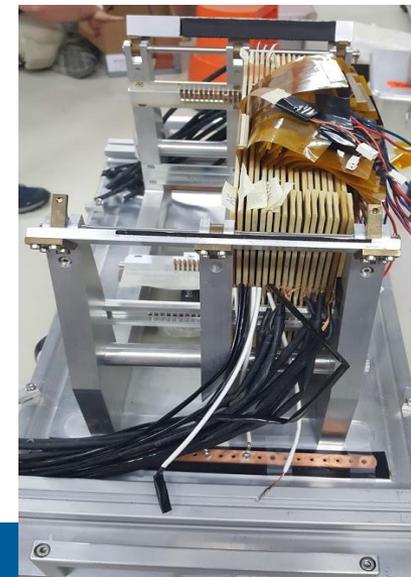
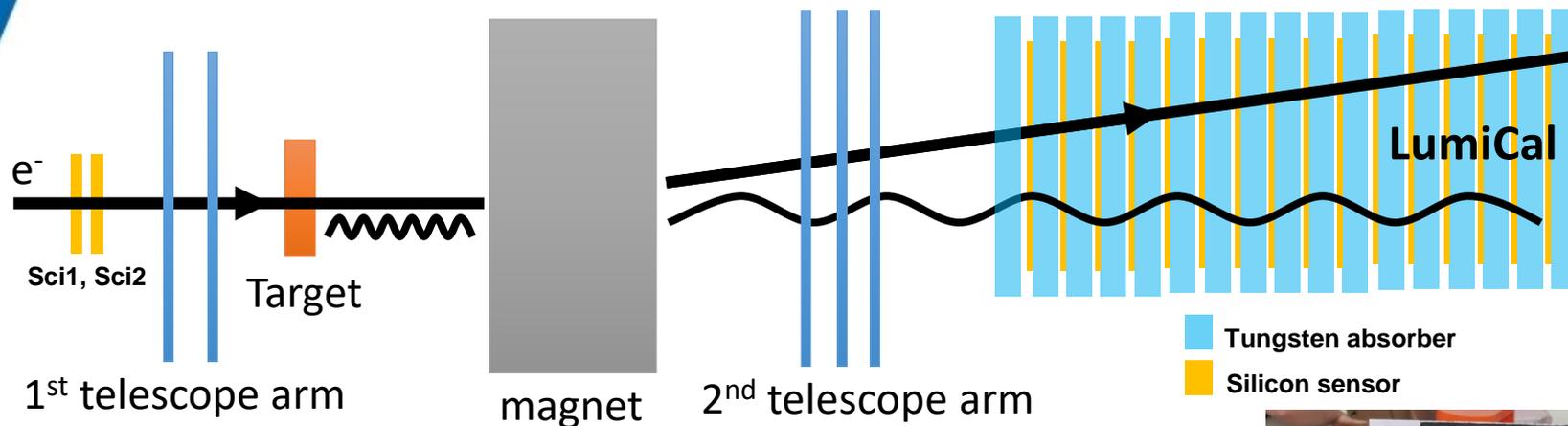
TB2019 – overview and plan

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Experimental set-up

- ❑ Test beam at DESY with 1 – 6 GeV electron beam
- ❑ ALPIDE telescope – 2 arms, 1st arm consists of 2 layers and 2nd arm consists of 3 layers;
- ❑ Target of tungsten with 90 μ m thickness;
- ❑ **Lumical** calorimeter consists of 16 Si sensors with one absorber layer placed in front of each active sensor layer;

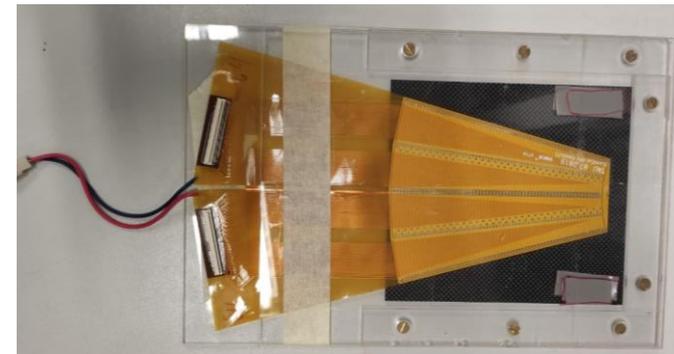


Experimental set-up

- The ALPIDE chip measures 15x30 mm and includes a matrix of 512x1024 pixel cells



- LumiCal plane consist of 256 pads, during the test-beam only 128 pads were read-out using an APV-25 board.



Electronics assembling

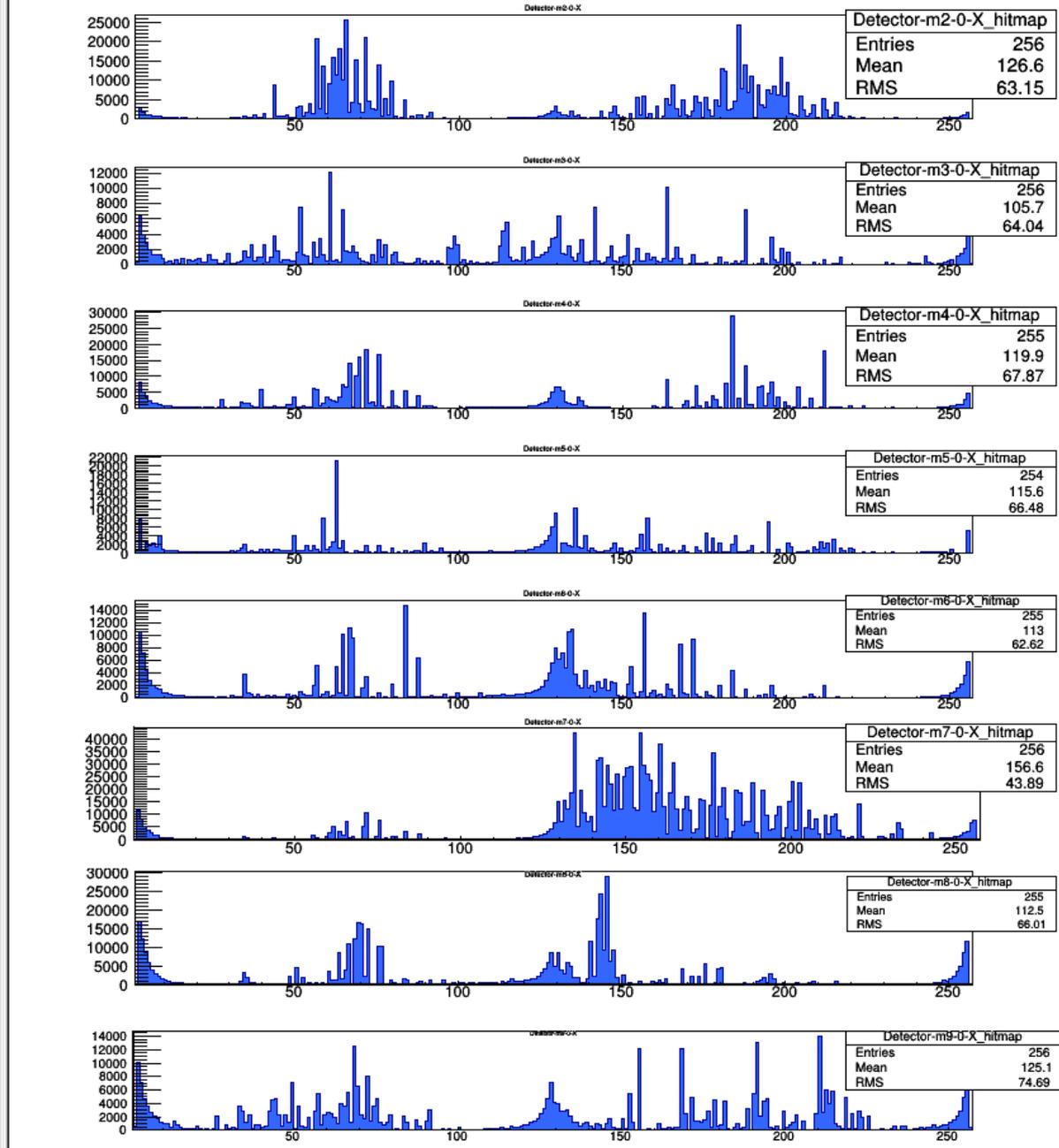
Si layers	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
APVs*	1	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1
FEC	2	2	0	0	0	0	0	0	0	0	1	1	1	1	2	2
HDMI cable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
HDMI input	0	1	0	1	2	3	4	5	6	7	0	1	2	3	-	-

- FEC0, FEC1, FEC2 – can't work on the same time;
- FEC2 didn't work properly;
- A few configurations were tested during TB data taken;
- In the logbook there are runs for FEC0 and FEC1.

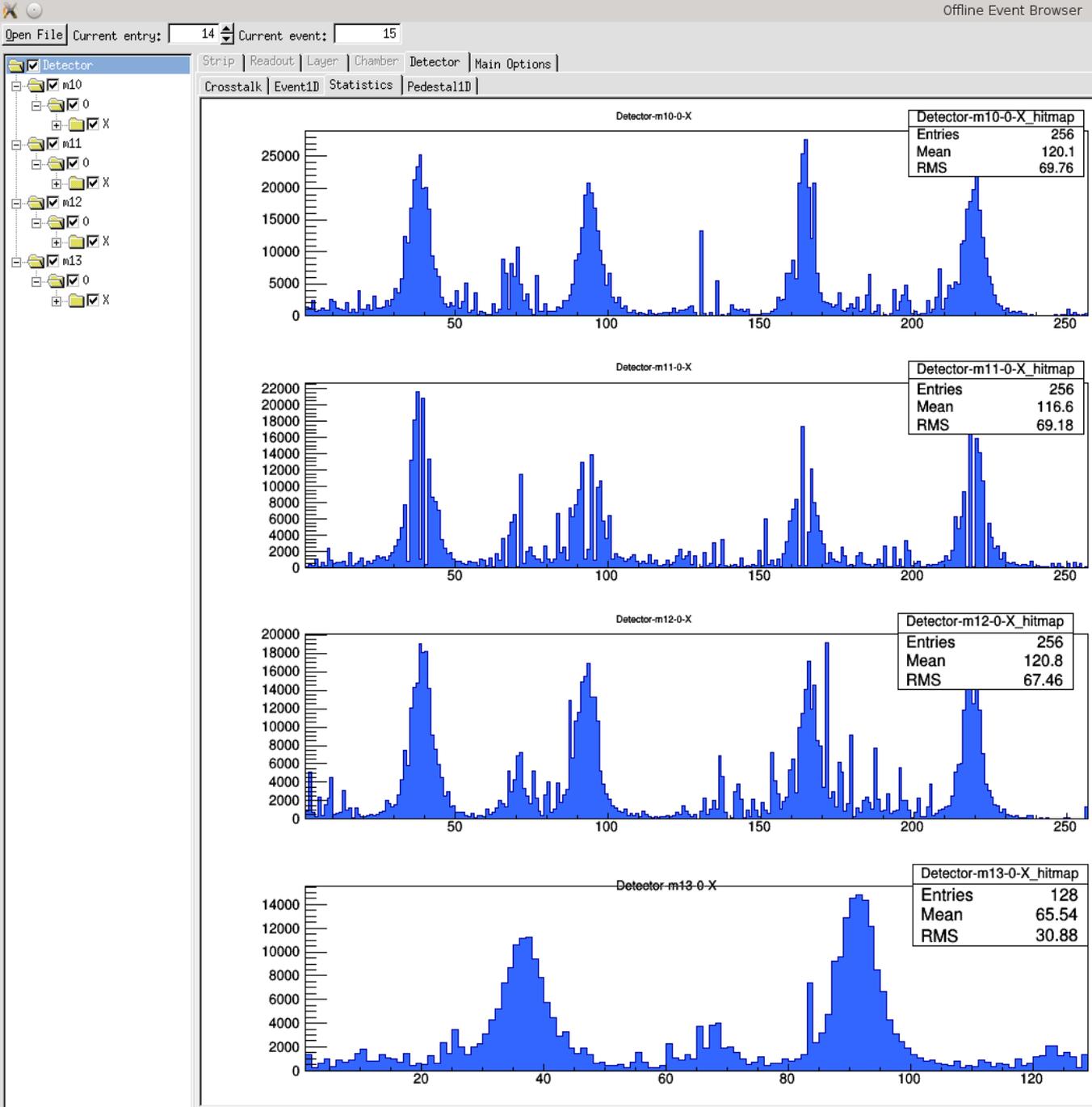
*Layers **3 to 13 connected** with double APV readout (Master and Slave), so only **128 pads** were read-out

Detector

- m2
 - 0
 - 0
 - 0
- m3
 - 0
 - 0
- m4
 - 0
- m5
 - 0
 - 0
- m6
 - 0
 - 0
- m7
 - 0
 - 0
- m8
 - 0
 - 0
- m9
 - 0
 - 0



Hit distributions for an event for all layers (3, 4, 5, 6, 7, 8, 9, 10) connected to FEC 1. All detector plans are connected with double APVs



Hit distributions for an event for layers (11, 12, 13, 14) connected to FEC 0. The first 3 layers (11 to 13) are connected with double APVs and the last one (14) is connected with one APV.

Data taken

- With the same hit position we took data for different energies 1 to 5 GeV;
- Scan position – 10 positions for 5 GeV electron beam, connected FEC0 and FEC1
- Data for LUXE using ALPIDE planes, with magnetic field, target and w/o LumiCal.

Data collected

- ~ 50k events for each run with telescope + LumiCal
 - ~ 300k events for each run with telescope
 - ~ 3 million events acquired in LumiCal
 - ~ 7 million events acquired in telescope
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- For LumiCal – **Ntuples** were produced for analysis
 - For telescope – **raw** files were produced

11-17 November 2019
 DESY Hamburg
 Europe/Berlin timezone



Participant List

Number of participants: 19

↓ name	institution	city	cou
BENHAMMOU, yan	Tel Aviv University	Tel Aviv	Isra
BORYSOVA, Maryna	KINR	Hamburg	Ge
BORYSOV, Oleksandr	DESY	Hamburg	Ge
GHENESCU, Veta	Institute of Space Science	Bucharest	Ror
GOSTKIN, Mikhail	JINR - Joint Institute for Nuclear Research	Dubna	Rus
HENSCHEL, Hans	DESY	Zeuthen	Ge
HOFFMANN, Marius	DESY	Hamburg	Ge
IDZIK, Marek	AGH University of Science and Technology	Krakow	Pol
KLEMP, Wolfgang	Cern	Geneva	Sw
LAPKIN, Aleksandr	Joint Institute for Nuclear Research	Dubna	Russian Federation
LEVY, Itamar	TAU		
MORON, Jakub	AGH University of Science and Technology		
RAVIV-MOSHE, Meny	TAU		
SAMOFALOVA, IANA	Joint Institute for Nuclear Research		
SCHUWALOW, Sergej	DESY		
SHCHEDROLOSIEV, Mykyta	Taras Shevchenko National University of Kyiv		
SKAKUNOV, Maksim	National Research Tomsk State University		
SMILJANIĆ, Ivan	Vinca Institute of Nuclear Sciences		
TRIFONOV, Aleksei	Joint Institute for Nuclear Research		



Data analysis plan

Tasks :

- tracking: telescope data (clustering, single track event,...) and data synchronization
- Noise and signal analysis, shower development
- Moliere radius

Aim:

- to have preliminary results before the next test beam;

People involve:

- **who will work on it?**