

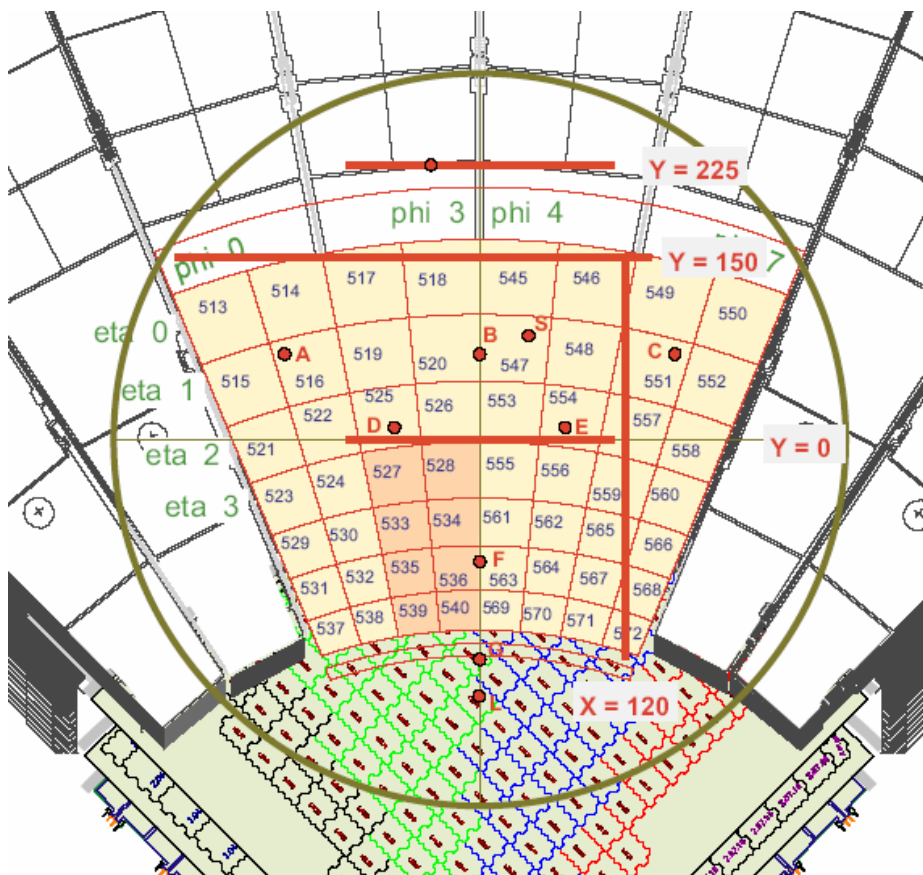
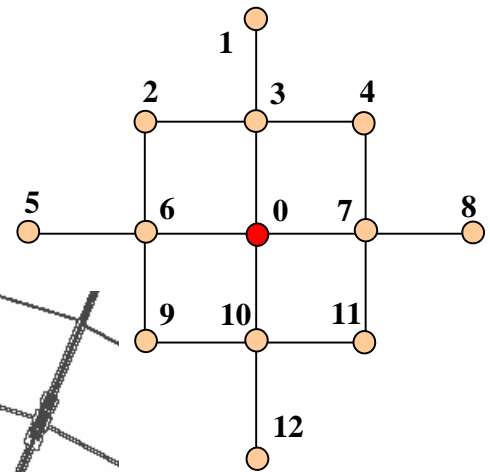
Standard points in run-1

X=0 corresponds to tick 99953

Point	A	B	C	D	E	F	G	L	S
X	-160	0	160	-70	+70	0	0	0	40
Y	+70	+70	+70	+10	+10	-100	-180	-214	90

Point L can be reached when scintillators and chambers at table lowered down by 3 cm

- Points grid for shape studies
pitch = 2 cm



Run program for period 1

- Grid of impact points for high statistics energy scans: electrons and pions (+ and -) at 10, 20, 40, 60, 80, 100, 120, 150, 200 and muons (120?) in EMEC/HEC region and FCAL
- EMEC/HEC: Scan around each 'standard grid point' with electrons (120) and pions (150/200)
- Try to get electrons directly into HEC to obtain α_{em} : E=120/150
- Stability Runs: electrons (120) and pions (150) at two EMEC/HEC and two FCAL standard grid points. Typically every second (?) day
- Horizontal scans with electrons (120 and 150) and pions (120 and 200) and muons (120):

Y=10	X = -250	→ +250	$\Delta = 10$
Y=150	X = -250	→ +250	$\Delta = 10$
Y=-80	X = -250	→ +250	$\Delta = 10$
- Vertical scans with electrons (120 and 150) and pions (120 and 200) and muons (120):

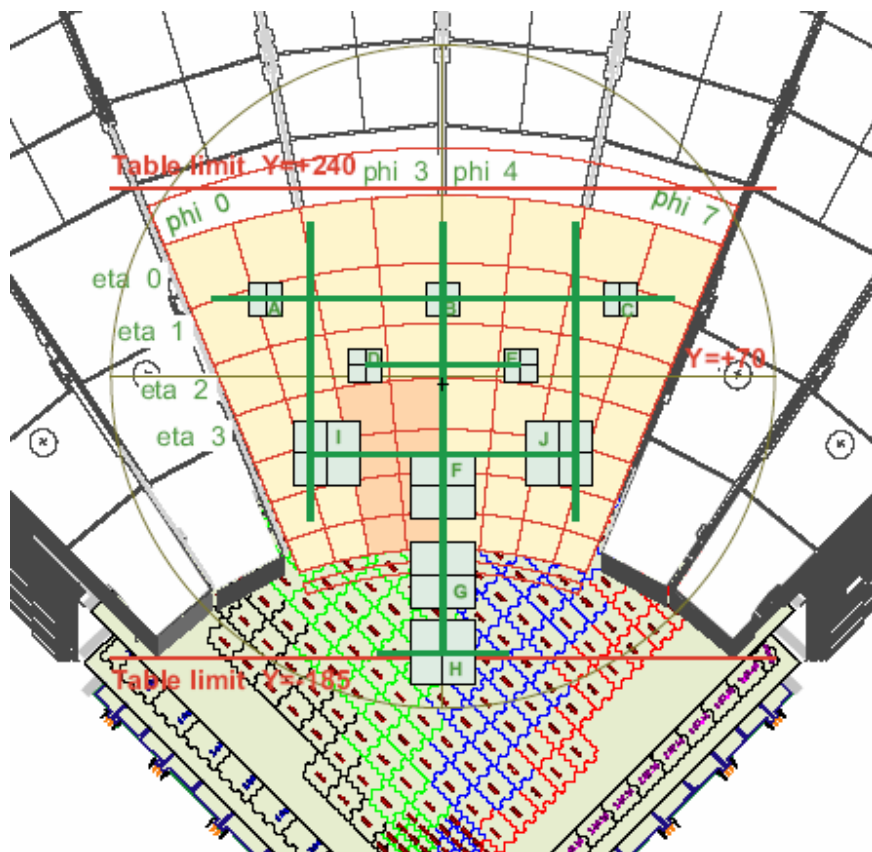
X = 0	y = -185	→ +225	$\Delta = 10 / 60$
X = +120	y = -185	→ +225	$\Delta = 10 / 60$
X = -120	y = -185	→ +225	$\Delta = 10 / 60$
- Scan with normal beam in small steps from EMEC/HEC until FCAL, then step back to EMEC/HEC and redo with wide beam and larger stepsize

Standard points in run-2

Cryostat moved:

upstream 4-5 mm
left 3 mm (X=0 corresponds to tick 9961)
up 70 mm

Point	A	B	C	D	E	F	G	H	I	J
X	-160	0	160	-70	+70	0	0	0	-105	105
Y	+140	+140	+140	+80	+80	-30	-110	-180	0	0



Run program for period 2

1. Eenergy scans in standard points: electrons, pions, muons all energies. Statistics: 24 k for electrons and 48 k for muons/pions.

$$\text{Total: } 9 \cdot 10 \cdot (24 + 48) + 9 \cdot 2 \cdot 48 = 7\,344 \text{ k}$$

2. Vertical scans: from top (+210: BEND 9 limit) to low (-180 table limit)

- a) $x=0$ wide beam, delta 30, 14 points

pions: 200 and 60 GeV, 500k

electrons: 150 (120) and 60 GeV, 100k

muons: same energies as electrons, 100k

$$\text{Total: } 14 \cdot 2 \cdot (500 + 100 + 100) = 19\,600 \text{ k}$$

- b) $x = -120$, lowest point $y = -60$, narrow beam up to $y = 210$, delta=10, 28 points, 24k for electrons, 48k for pions and muons. For $y = 0, -30, -60$ repeat with wide beam: 500k pions and 100k for electrons and muons.

$$\text{Total: } 28 \cdot (48 + 48 + 24) + 3 \cdot (500 + 100 + 100) = 5160 \text{ k}$$

- c) $x = +120$, as scan 2b.

$$\text{Total: } 5160 \text{ k}$$

3. Horizontal scans:

- a) **Point H**, $y = -180$, $x = -60 \dots +60$ with delta =30, in total 5 points, wide beam. Beam, energy and statistics as in 2a.

$$\text{Total: } 5 \cdot 2 \cdot (500 + 100 + 100) = 7\,000 \text{ k}$$

- b) **Crack** $y = 0$ from $x = -120$ to $+120$, wide beam, delta=30, in total 9 points, statistics, energies as 2a.

$$\text{Total: } 9 \cdot 2 \cdot (500 + 100 + 100) = 12\,600 \text{ k}$$

- c) **Upper region**: $y = 220$ (former 150), from $x = -120$ to $+120$, with delta=10, in total 25 points. Narrow beam, energies as in 2a. Statistics: 24k for electrons, 48k for pions and muons,

$$\text{Total: } 25 \cdot 2 \cdot (24 + 48 + 48) = 6\,000 \text{ k}$$

4. Special runs for signal **waveforms**: wide beam, electron 150 (120), pions 200, muons as electrons, always 24-32 time slices. Statistics: 100k.
FCAL: point H, EMEC/HEC: point B.

Total $2*3*100 = 600$ k

➤ Total sum: ~63 500 k