GXG meeting – trigger efficiency

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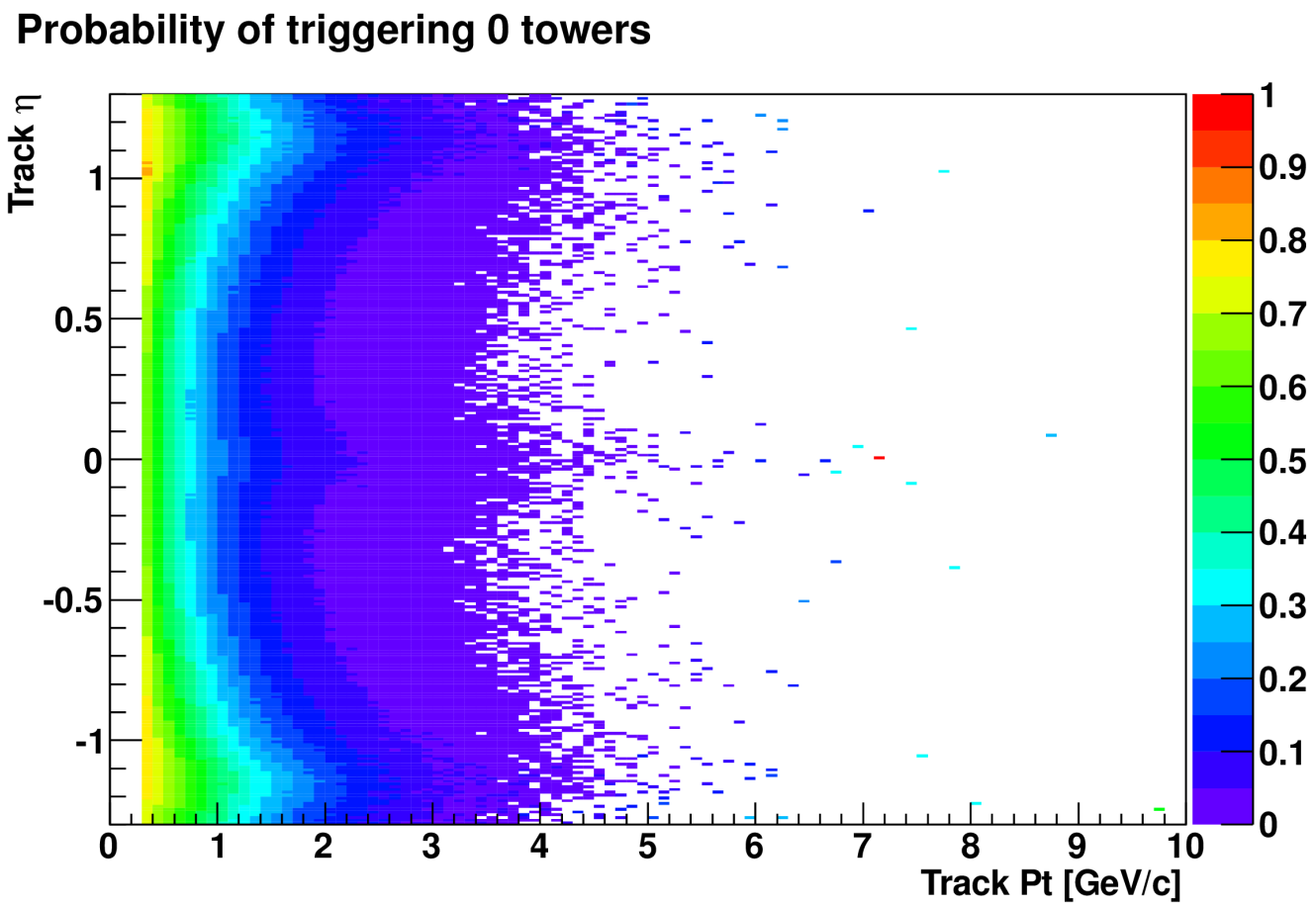
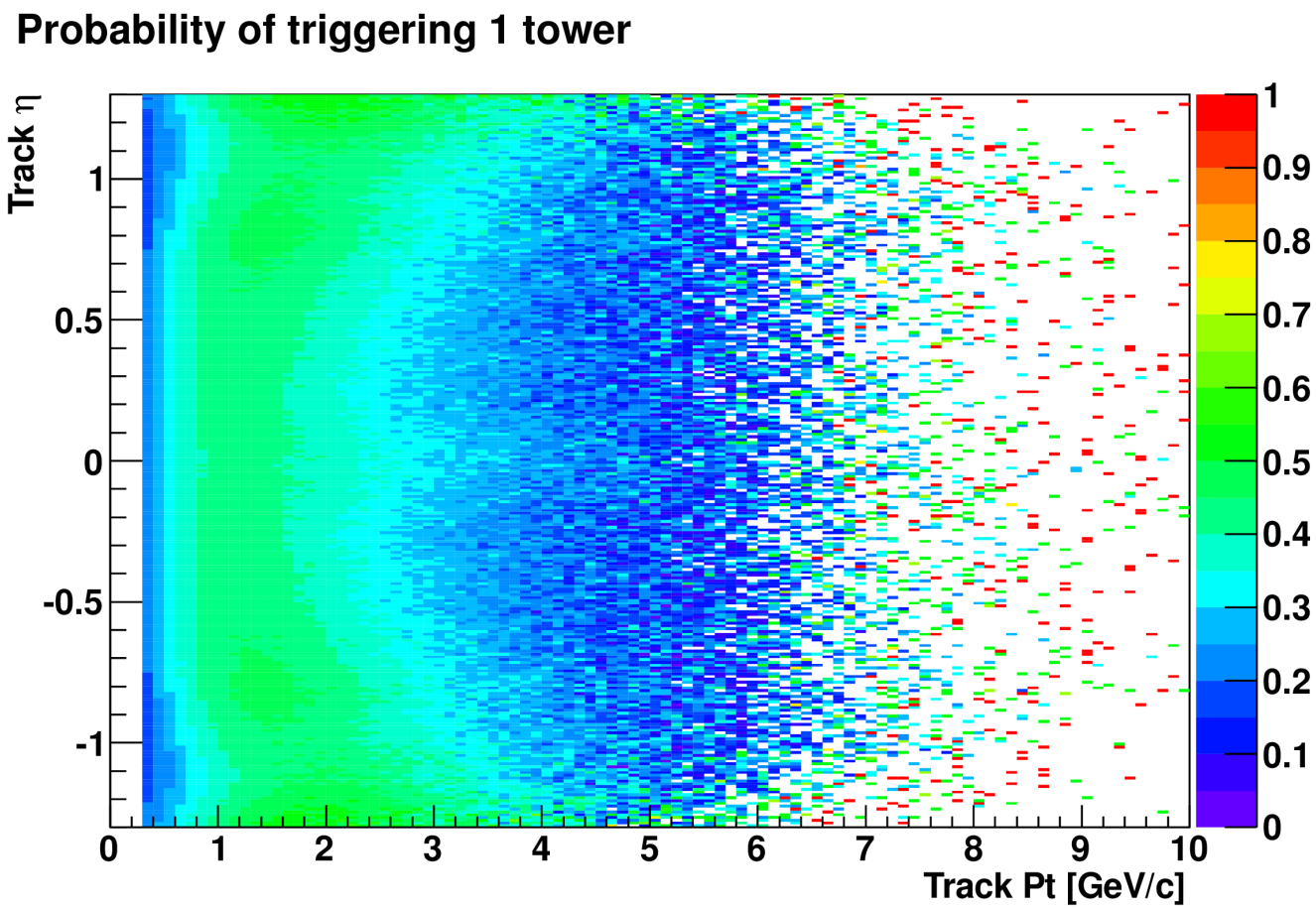
Reminder

- Probability of triggering 2 or more towers in central detector by two independent tracks „a” and „b”:
  - P_2(a)+P_1(a)*(P_1(b)+P_2(b))+P_0(a)*P_2(b)
    - P_0 – probability of triggering no towers
    - P_1 – probability of triggering one tower
    - P_2 – probability of triggering two or more towers
  - Functions of Pt (before) and eta (now)

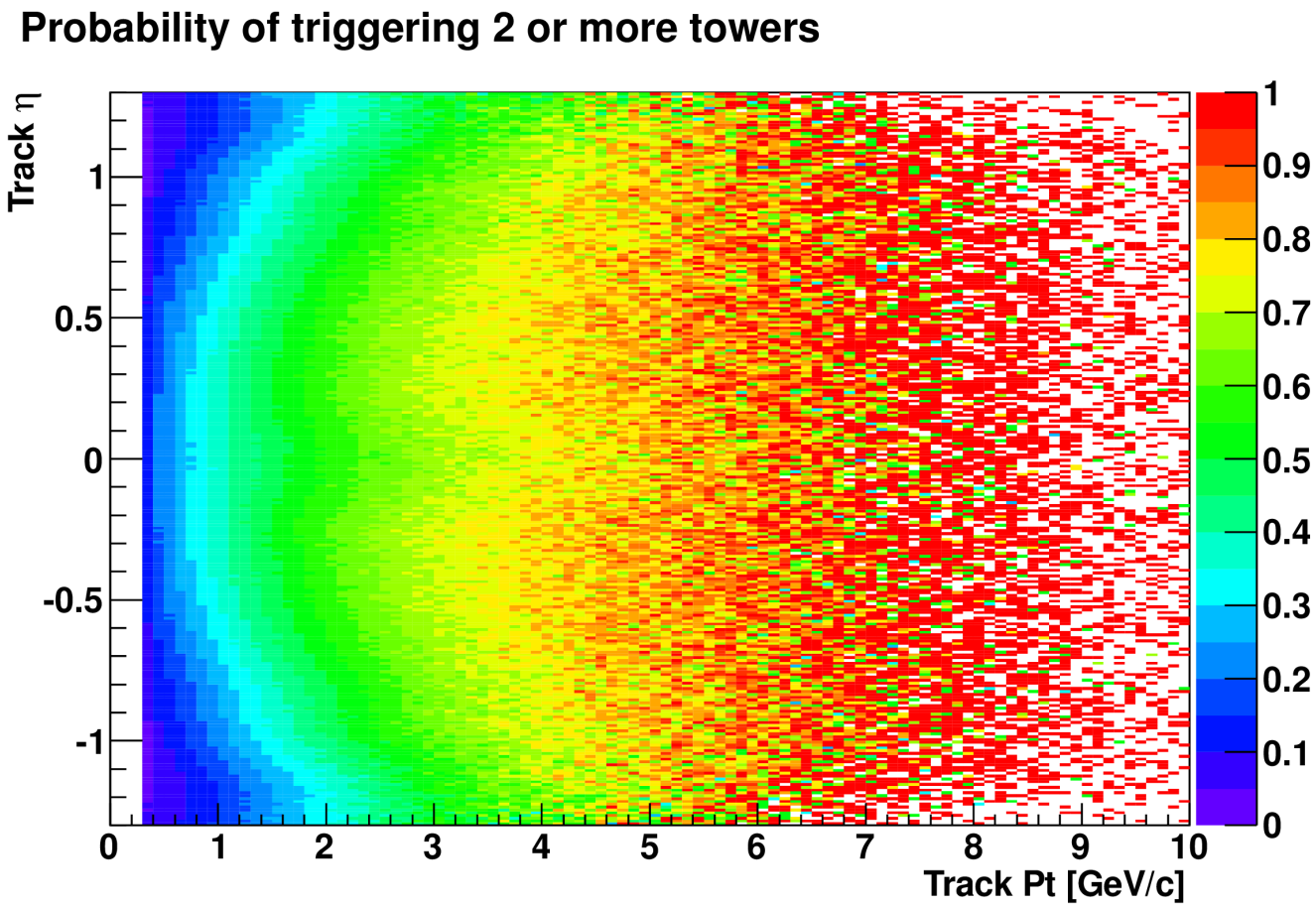
P_0


Probability of triggering 0 towers
Track η
1
0.5
0
-0.5
-1
0
1
2
3
4
5
6
7
8
9
10
Track Pt [GeV/c]
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0

P_1


Probability of triggering 1 tower
Track η
1
0.5
0
-0.5
-1
0
1
2
3
4
5
6
7
8
9
10
Track Pt [GeV/c]
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0

P_2


Probability of triggering 2 or more towers
Track η
1
0.5
0
-0.5
-1
0
1
2
3
4
5
6
7
8
9
10
Track Pt [GeV/c]
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0

Problems and solutions

- Does not factorize
- Low statistics (data driven)
- Requires track separation in calorimeter

- 2D polynomial fitting
- MC – to be checked if it is reliable
- Track correlations in calorimeter to be investigated in future (i.e. for 4 tracks)