

Data that used for:

- Signal (MC)

`/data/scratch/userspace/pretz/daqsim-reconstruction/output/daqsim-baseline/gamma.xcd`

- Background (Real data)

`/data/scratch/userspace/pretz/scrappy-platypus-optimization/datafiles/energy.dec20.run005481.xcd`

Events used in each stage:

◆ Training:

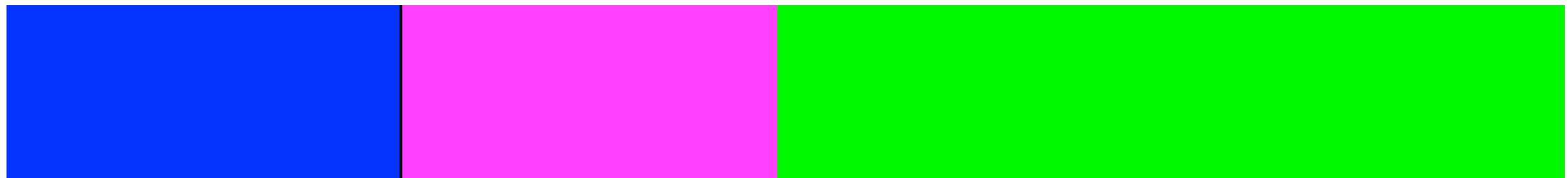
25 %

◆ Verification:

25%

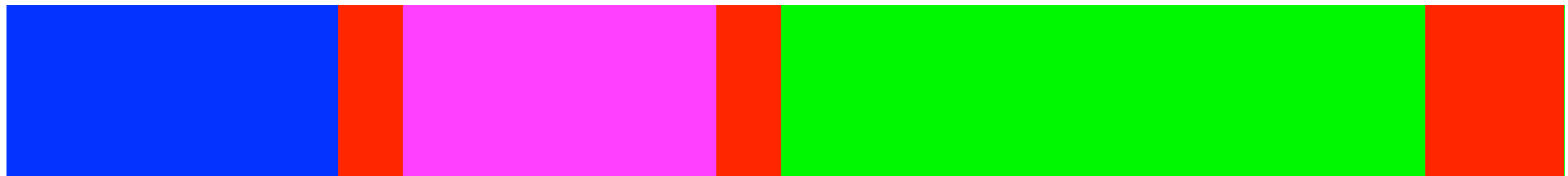
◆ Testing:

50 %



- `rec.angleFitStatus==0`
- `rec.coreFitStatus==0`
- `rec.nChAvail>=700`

- `rec.coreFiduScale<=100`
- `rec.delAngle < Opt Angle`
(Only gamma file)



Using a TMVA:

- Neural network (NN): architecture NumberInput:10:10:1

2 Inputs

1. Compactness
2. rec.PINC

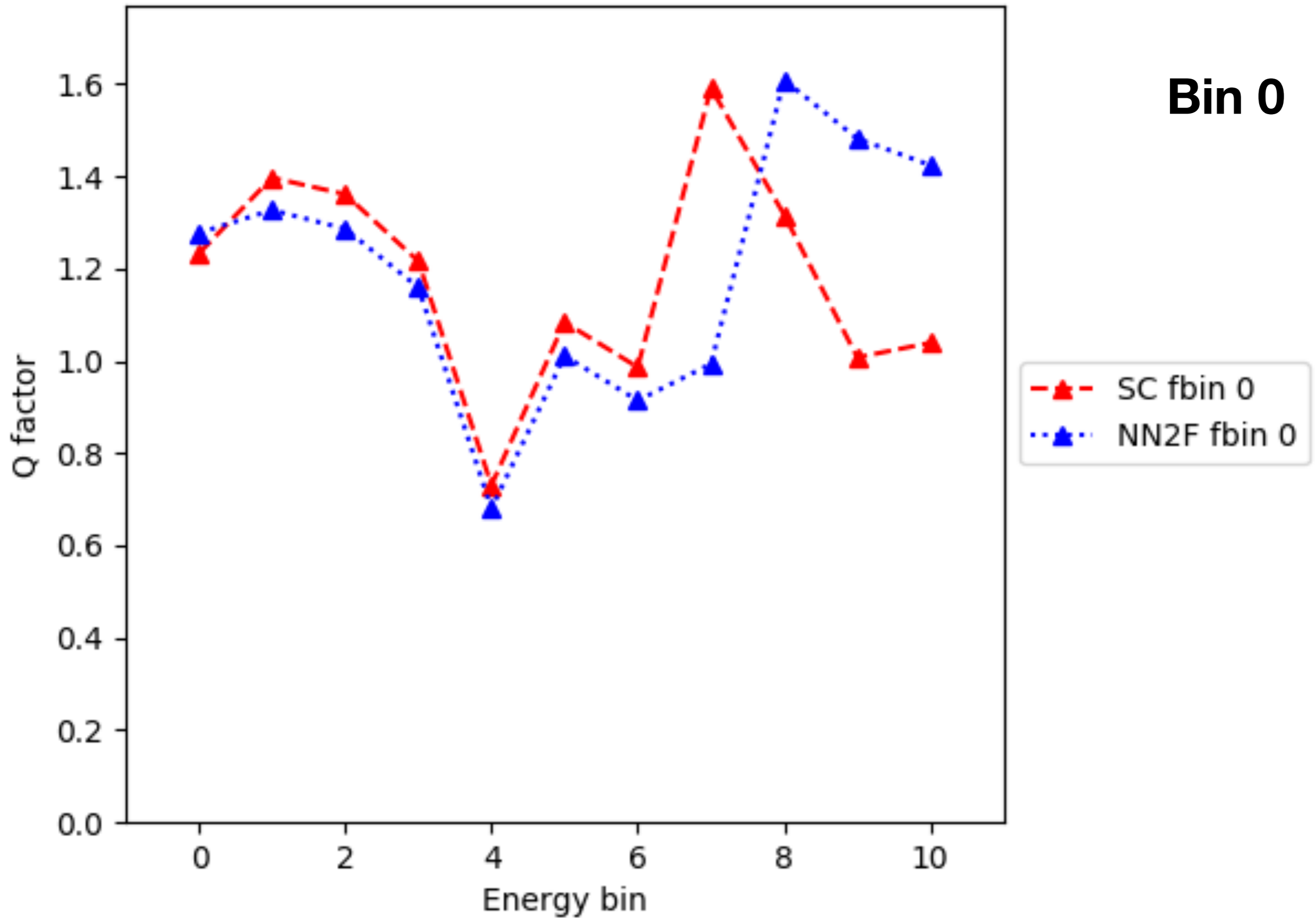
- 10 bins like Crab paper

fbin is $n\text{HitSP20}/n\text{ChAvail}$ in steps of 0.1
ebin is $\log GP$ in steps of 0.25 from $10^{2.5}$ - $10^{5.5}$ GeV

Q vs E bin

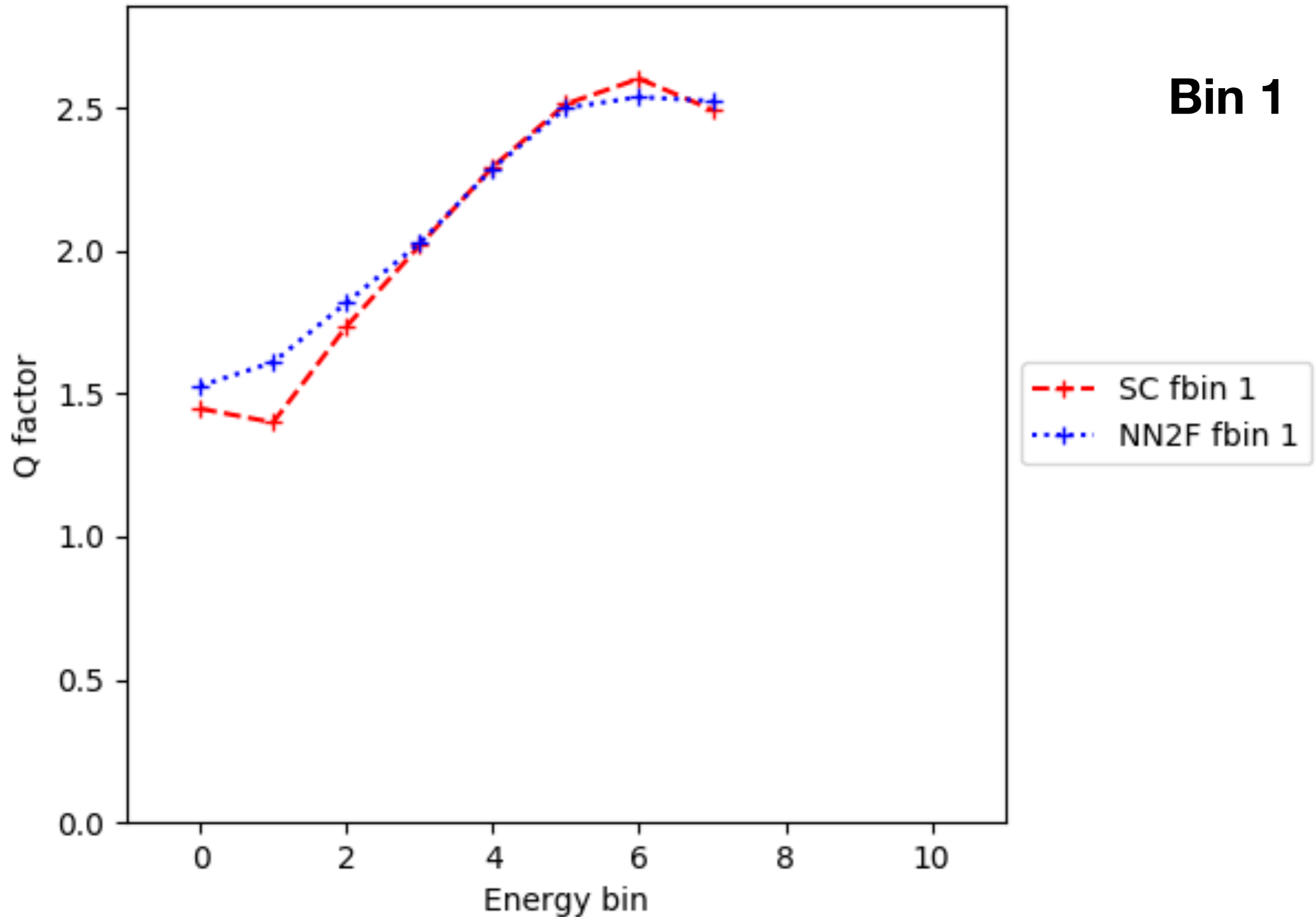
MC Testing

Bin 0



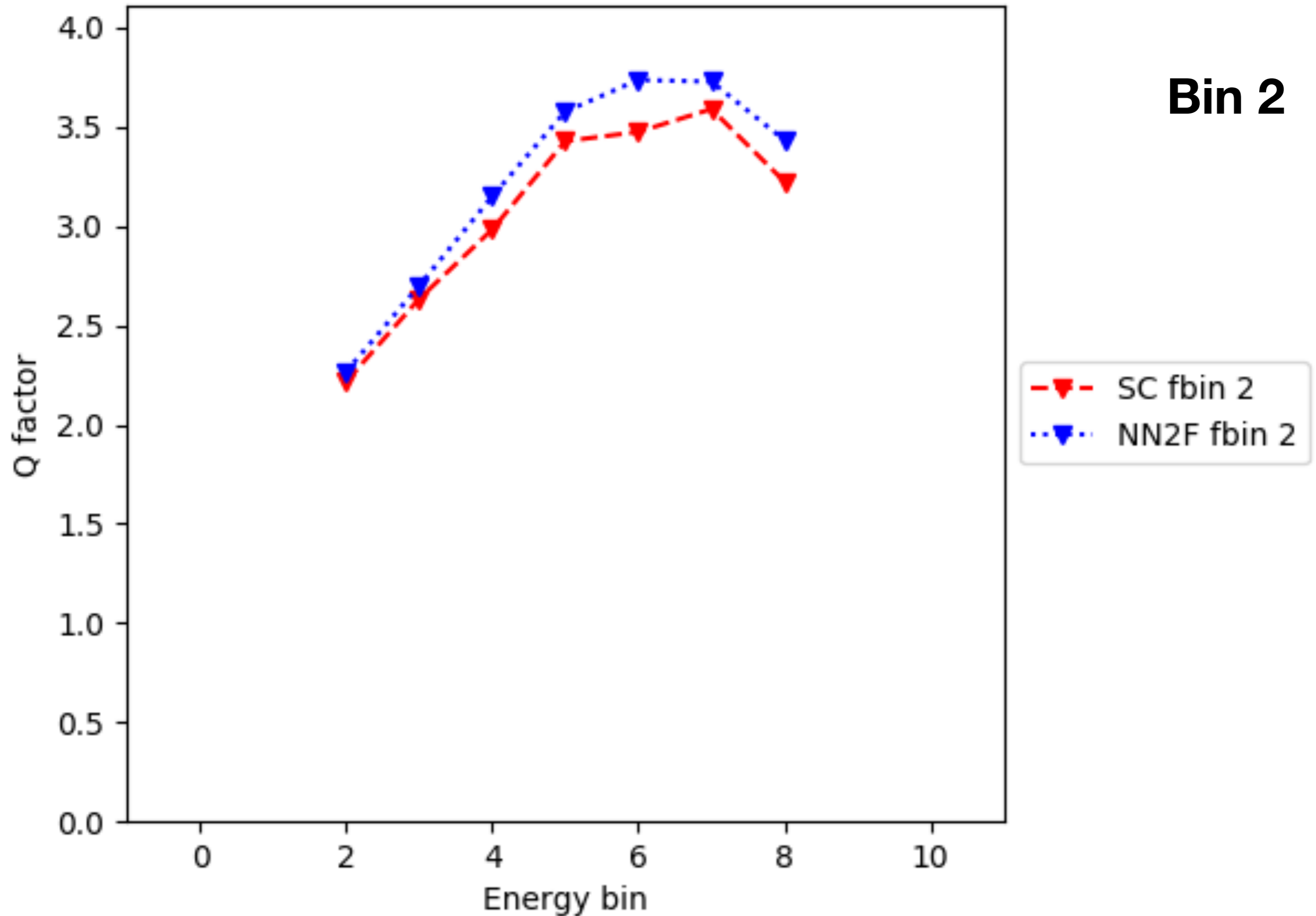
Bin 1

Q vs E bin

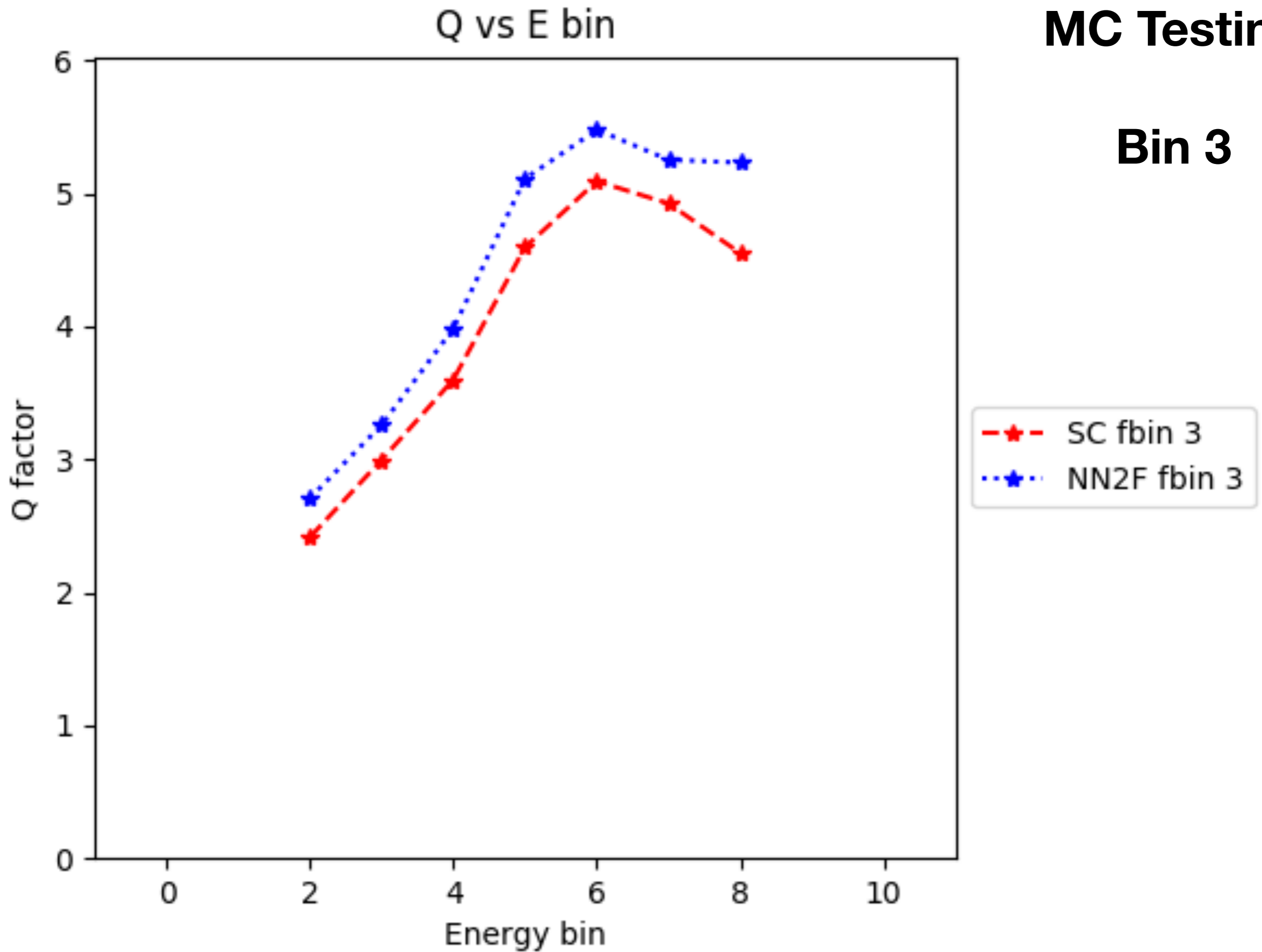


Bin 2

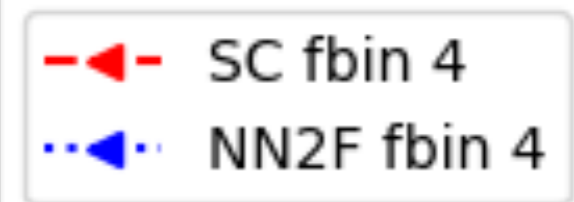
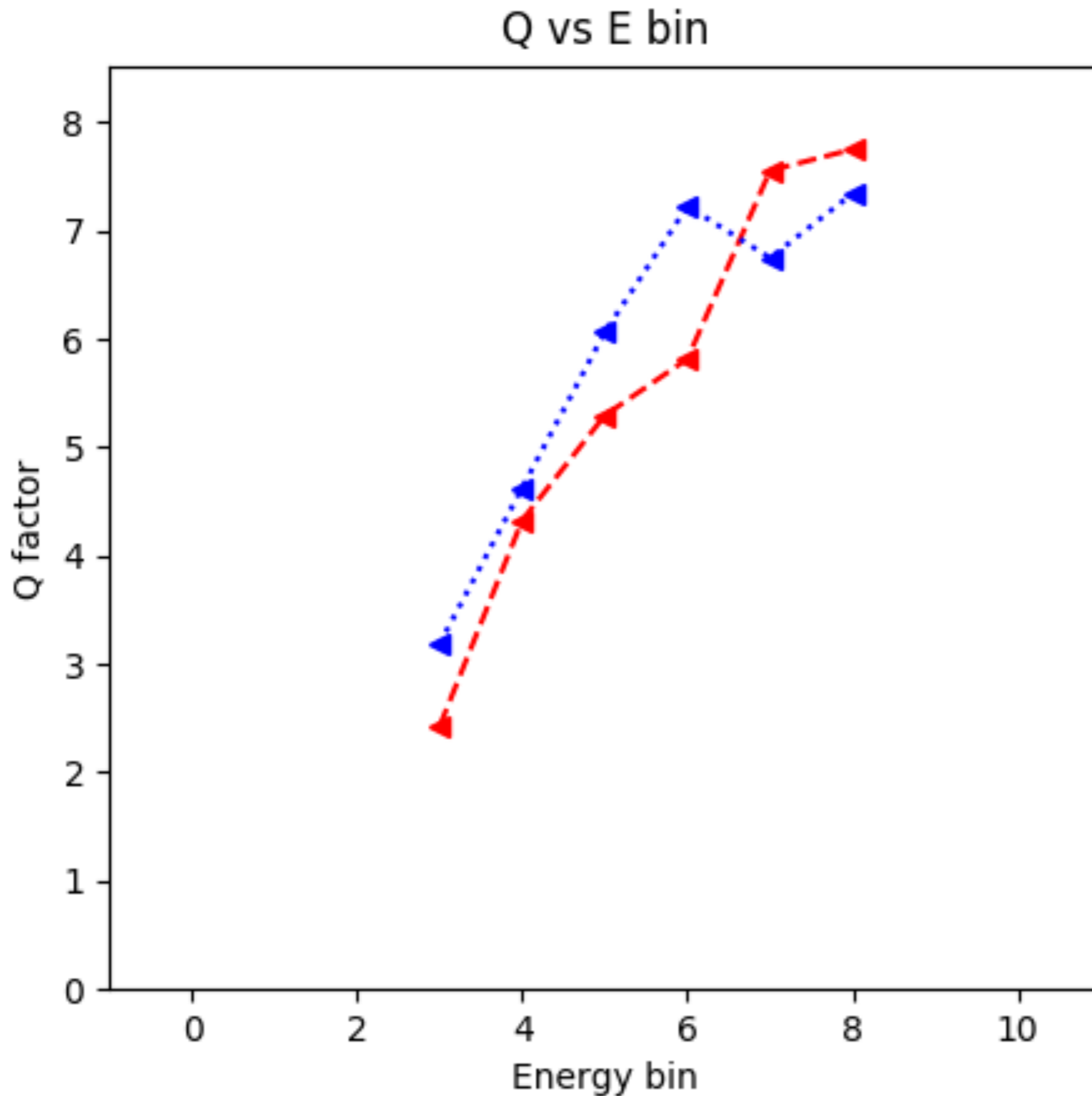
Q vs E bin



Bin 3



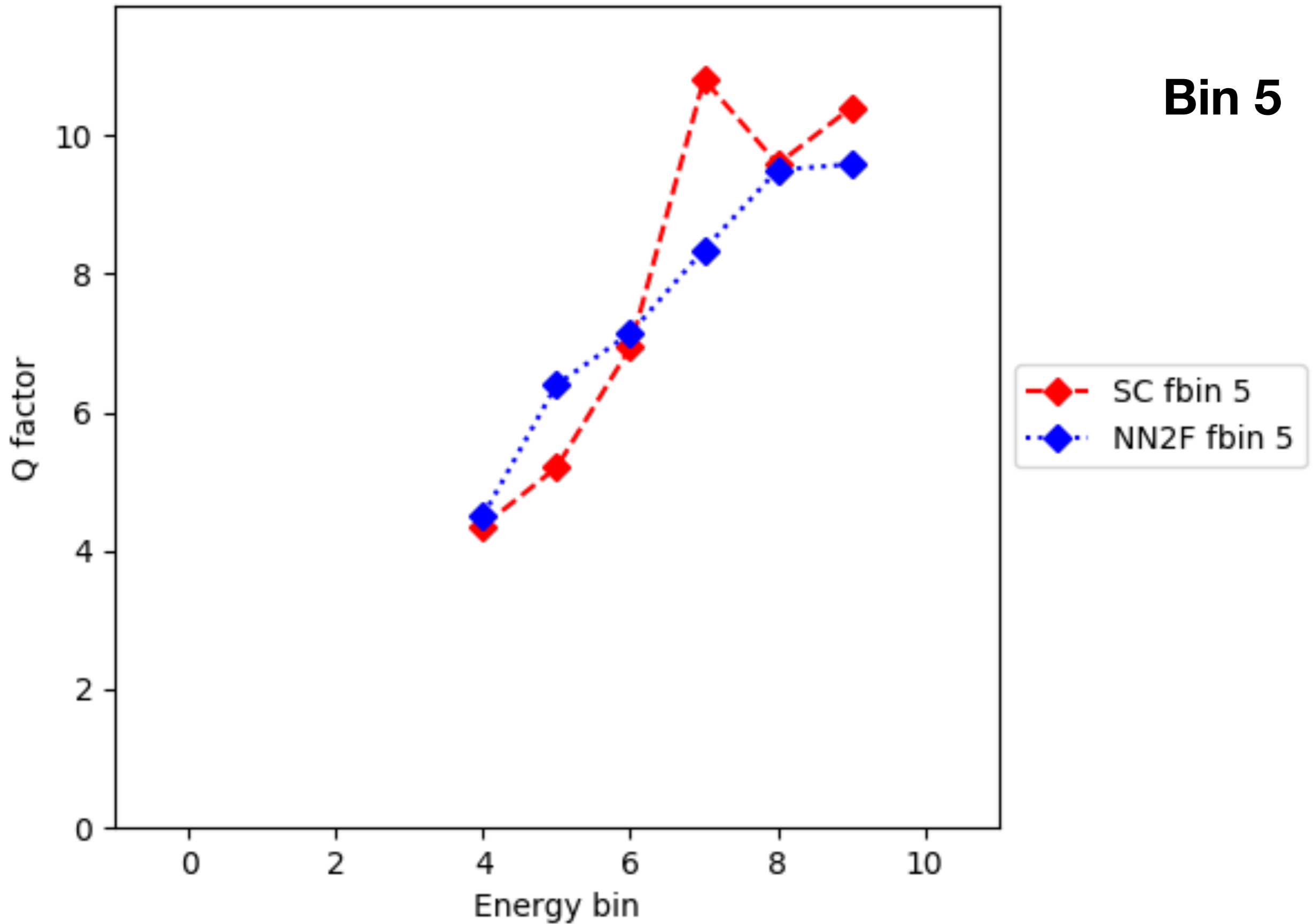
Bin 4



Q vs E bin

MC Testing

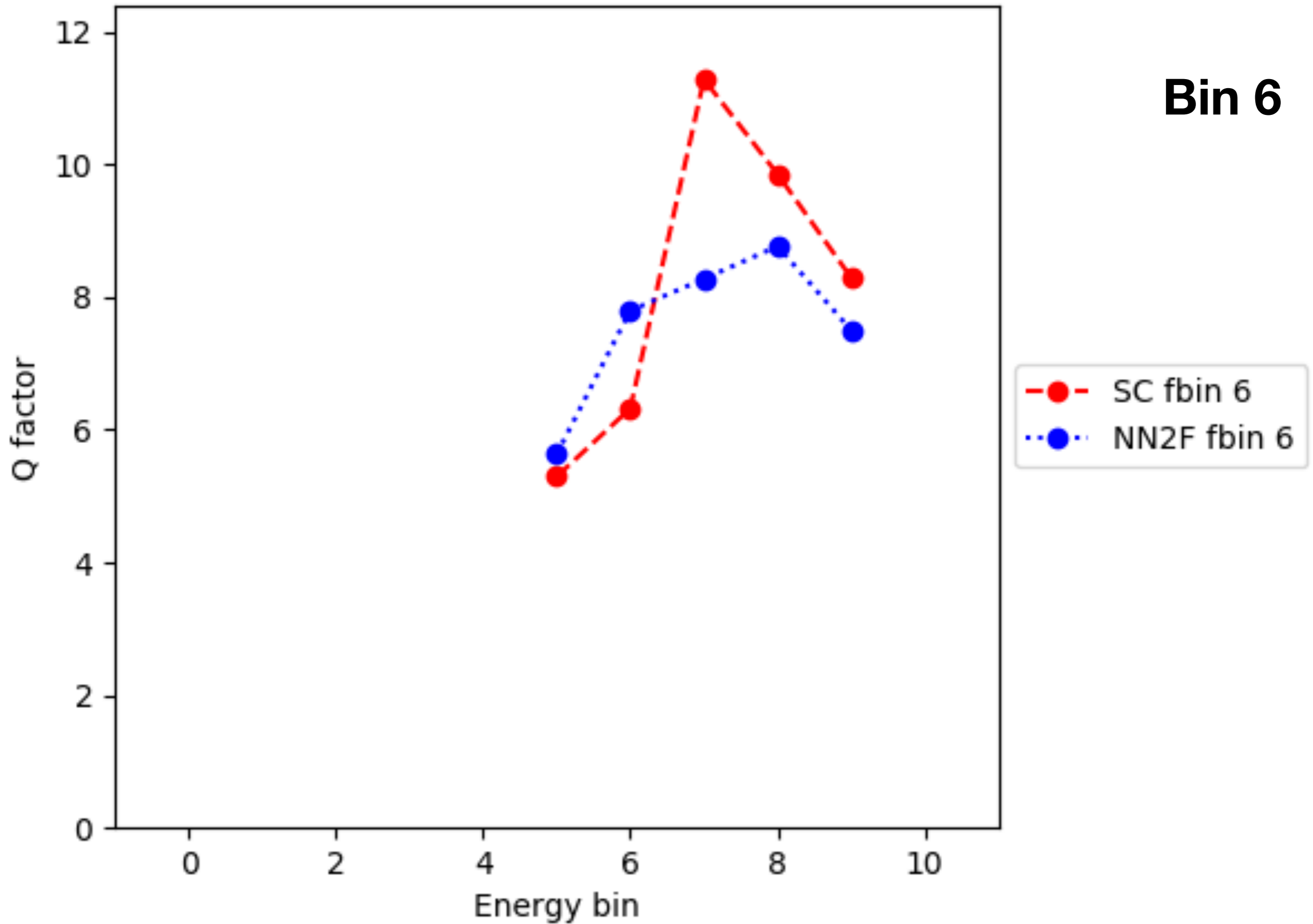
Bin 5



Q vs E bin

MC Testing

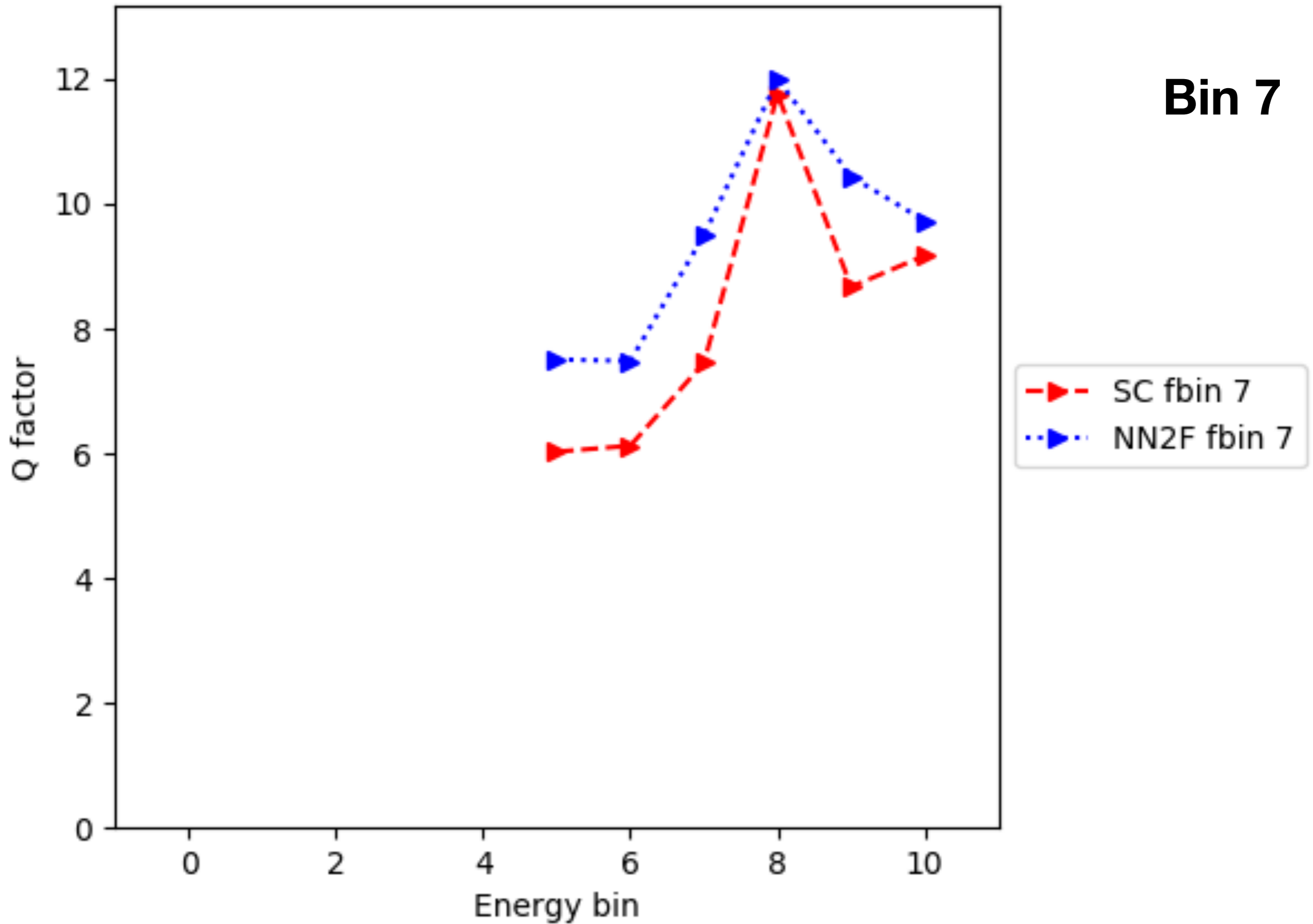
Bin 6



Q vs E bin

MC Testing

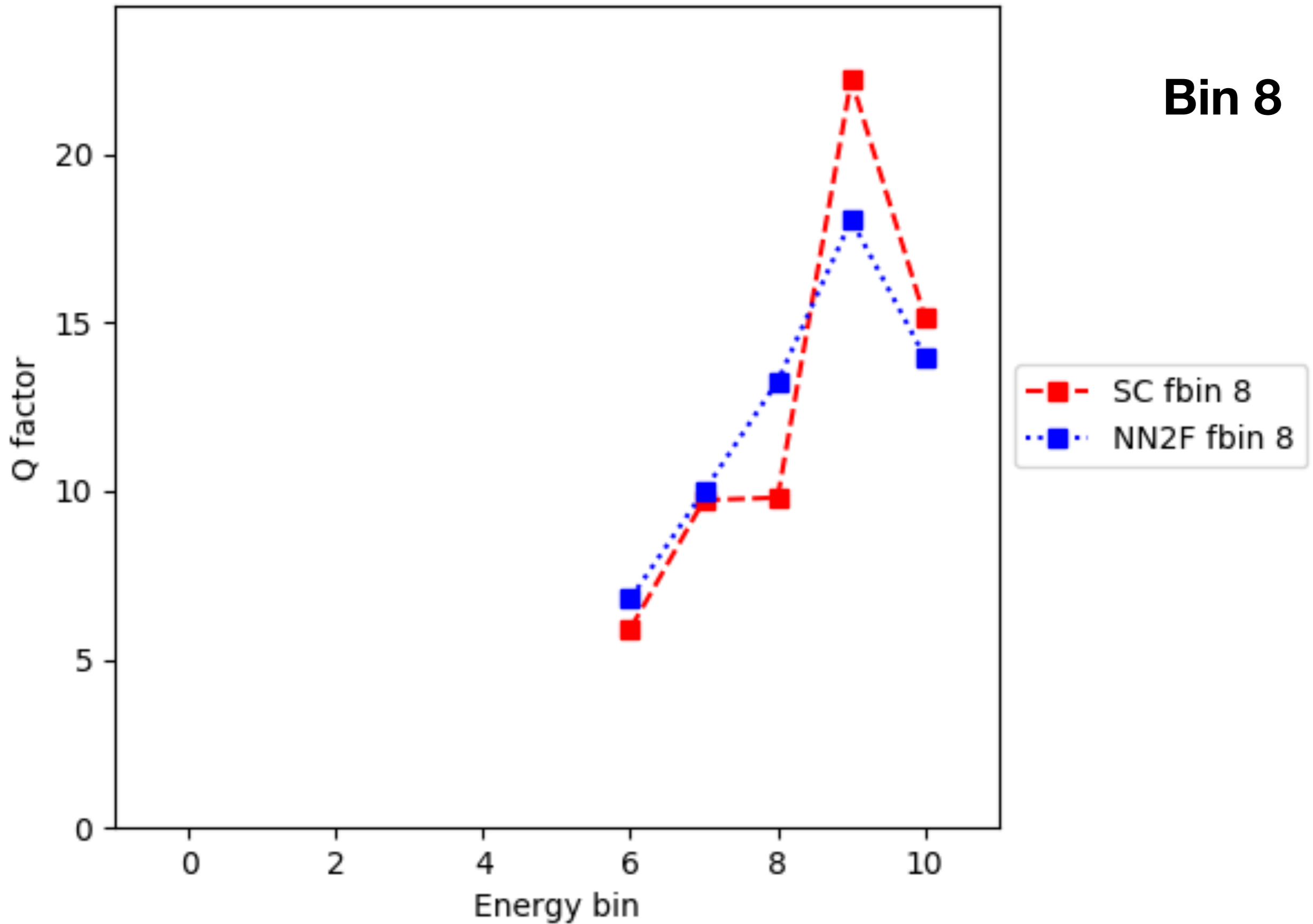
Bin 7



Q vs E bin

MC Testing

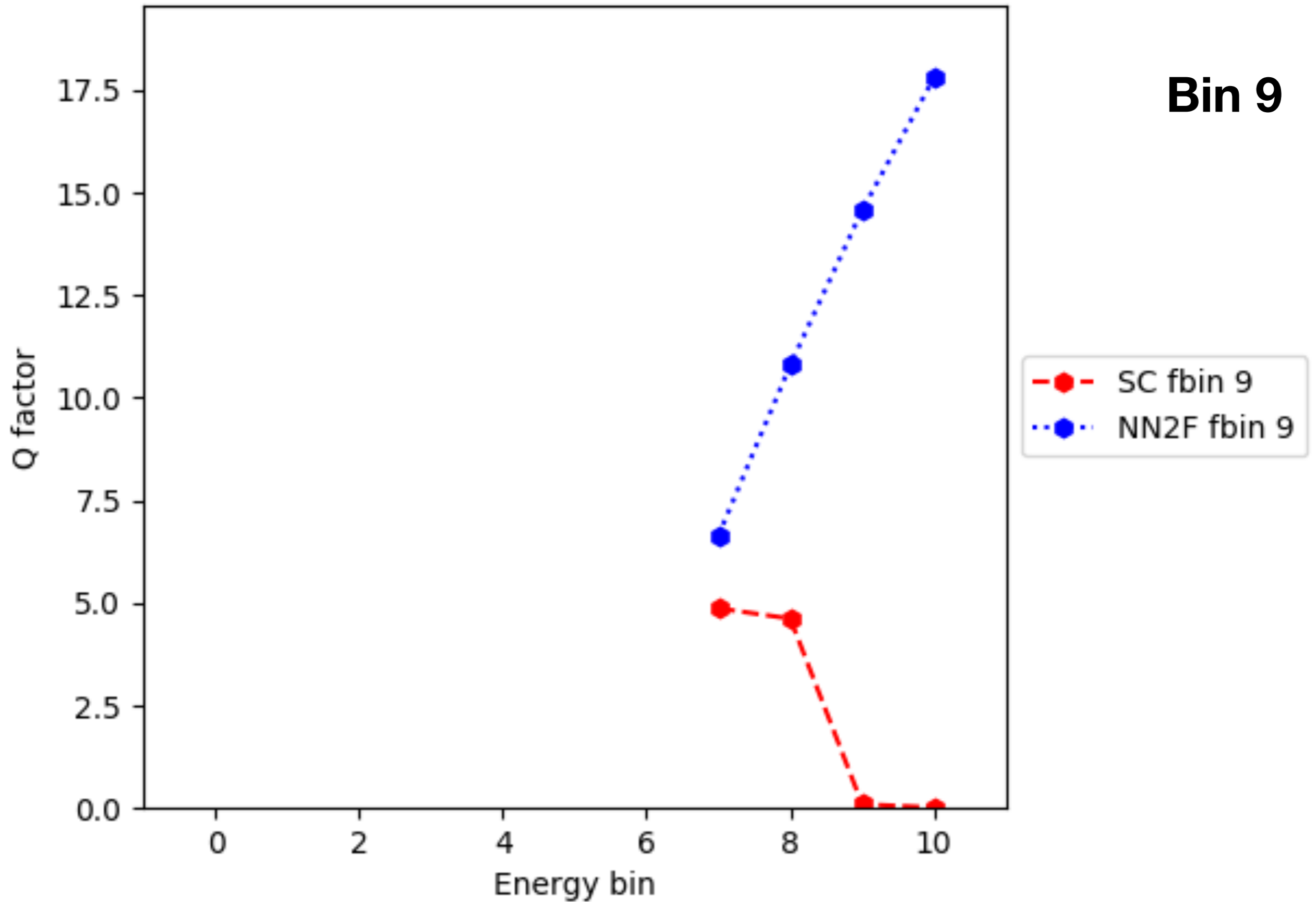
Bin 8



Q vs E bin

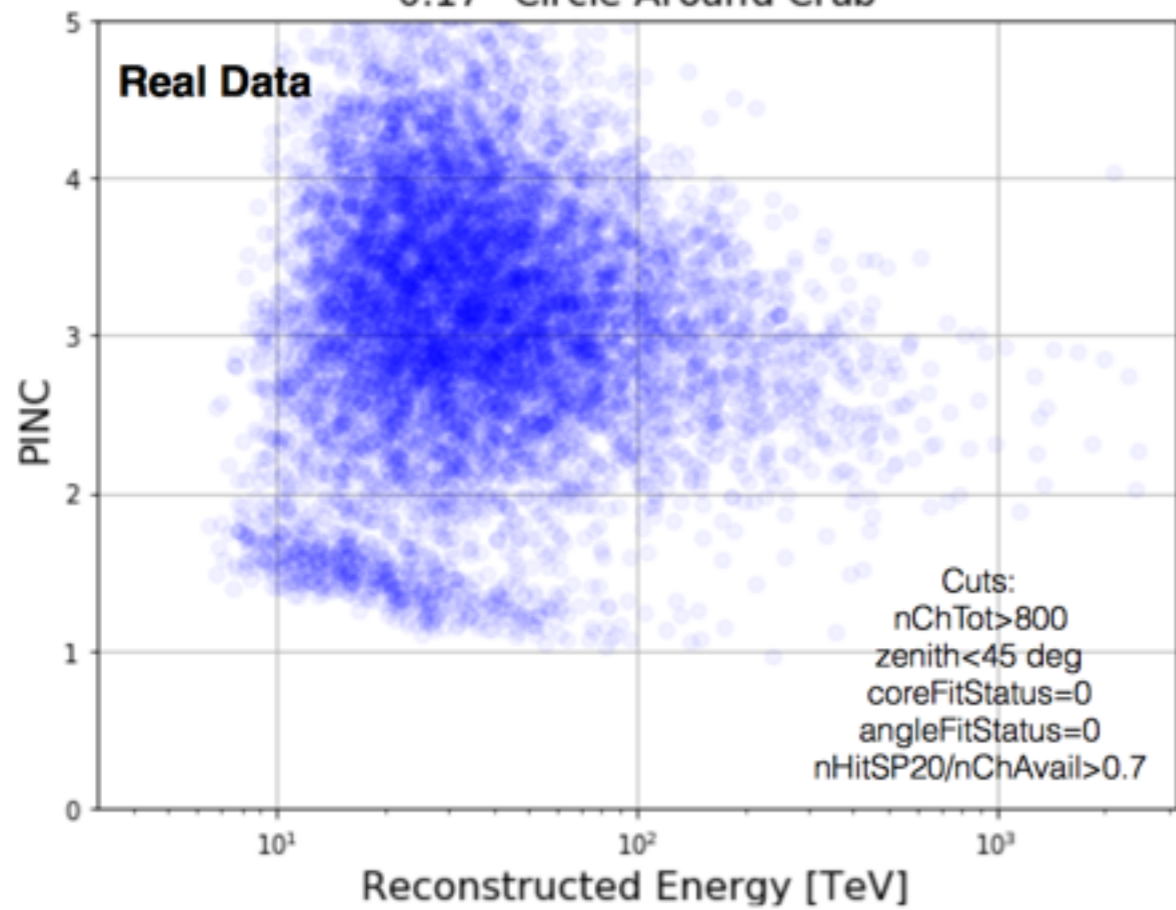
MC Testing

Bin 9

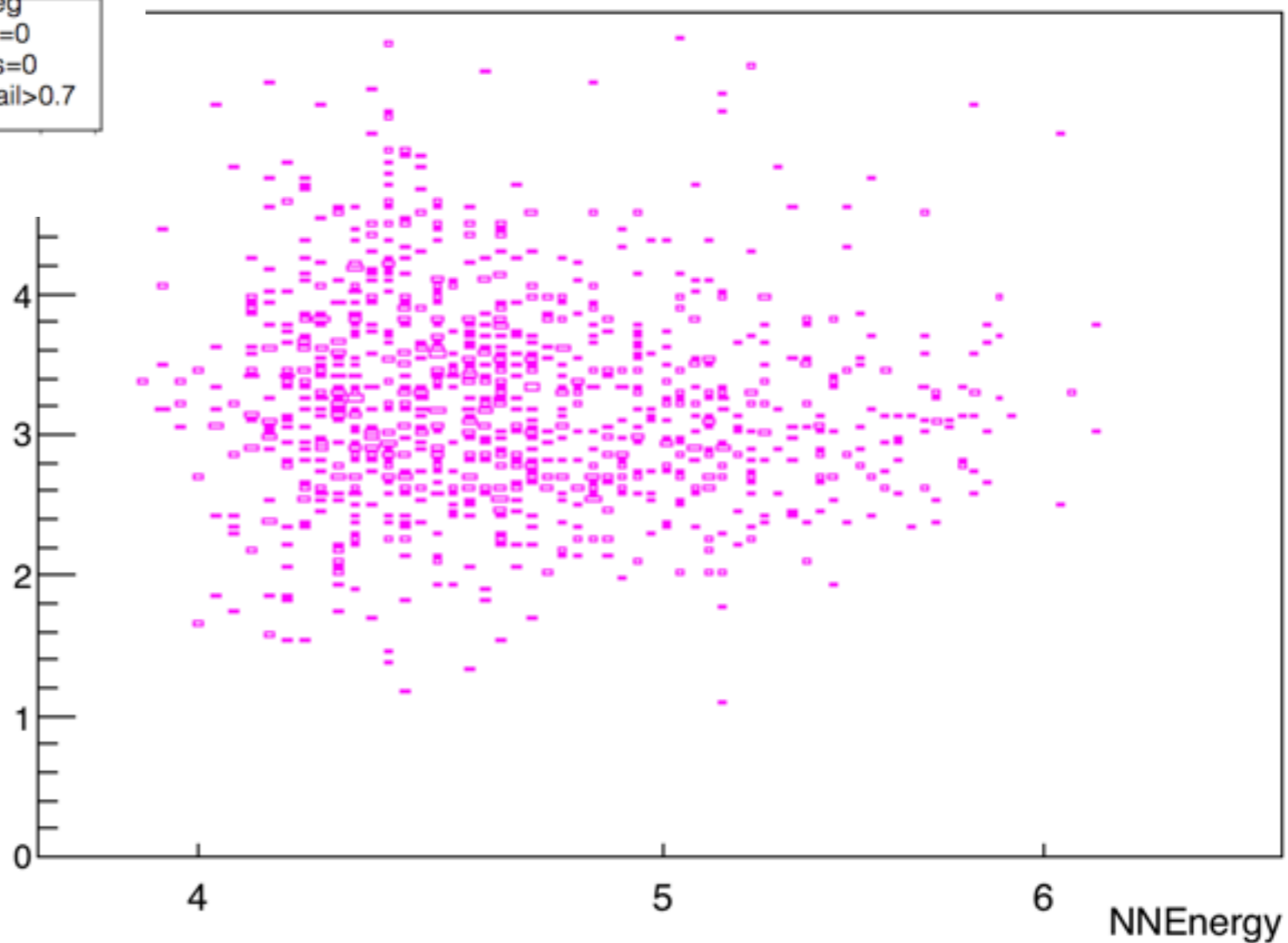


Back Slide

0.17° Circle Around Crab



PAndE Bin 8



liff-MakeOptApertures -d 22.02

-i /data/archive/hawcroot/maps/maps-20170630/liff/
response_aerie_svn_27754_systematics_best_mc_test_nobroadpulse_10pctlogchargesmearin
g_0.63qe_25kHzNoise_run5481_curvature0_index3.root

Bin	fhit min	fhit max	opt del angle (rad)
0	0.044	0.067	0.02356
1	0.067	0.105	0.01627
2	0.105	0.162	0.01143
3	0.162	0.247	0.00861
4	0.247	0.356	0.00642
5	0.356	0.485	0.00478
6	0.485	0.618	0.00422
7	0.618	0.740	0.00356
8	0.740	0.840	0.00302
9	0.840	1.010	0.00269