

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`

Bins:

1. fbin in nHitSP20/nChAvail in step of 0.1
2. ebin is log NNenergy in step of 0.25 from $10^{2.5}$ - $10^{5.25}$

ebin	min ebin	max	min ebin (GeV)	max bin (Gev)
0	2.50	2.75	316.23	562.34
1	2.75	3.00	562.34	1000.00
2	3.00	3.25	1000.00	1778.28
3	3.25	3.50	1778.28	3162.28
4	3.50	3.75	3162.28	5623.41
5	3.75	4.00	5623.41	10000.00
6	4.00	4.25	10000.00	17782.79
7	4.25	4.50	17782.79	31622.78
8	4.50	4.75	31622.78	56234.13
9	4.75	5.00	56234.13	100000.00
10	5.00	5.25	100000.00	177827.94
11	5.25	5.50	177827.94	316227.77

fbin	min fbin	max bin
0	0.0	0.1
1	0.1	0.2
2	0.2	0.3
3	0.3	0.4
4	0.4	0.5
5	0.5	0.6
6	0.6	0.7
7	0.7	0.8
8	0.8	0.9
9	0.9	1.0

Bins:

1. fbin in nHitSP20/nChAvail in step of 0.1
2. ebin is log NNenergy in step of 0.25 from $10^{2.5}$ - $10^{5.25}$

Cuts used

- `rec.angleFitStatus==0`
- `rec.coreFitStatus==0`
- `rec.nChAvail>=700`
- `rec.coreFiduScale<=100`

Optimal cut

1. liff-MakeDetectorResponse

- sweets files
- cuts file (New Johns cuts)
- centers of the declination bands (20°)

Optimal cut



51	0.1	0.2	3.75	4.0	0.555
61	0.1	0.2	4.0	4.25	0.669
71	0.1	0.2	4.25	4.5	0.783
81	0.1	0.2	4.5	4.75	0.5
91	0.1	0.2	4.75	5.0	0.905
101	0.1	0.2	5.0	5.25	0.898
111	0.1	0.2	5.25	5.5	0

2. liff-MakeOptApertures

- Declination in degrees
- Detector response file with a PSF fit

Using a TMVA for find a cut:

- [rec.delAngle < Opt Angle (Only gamma file)]

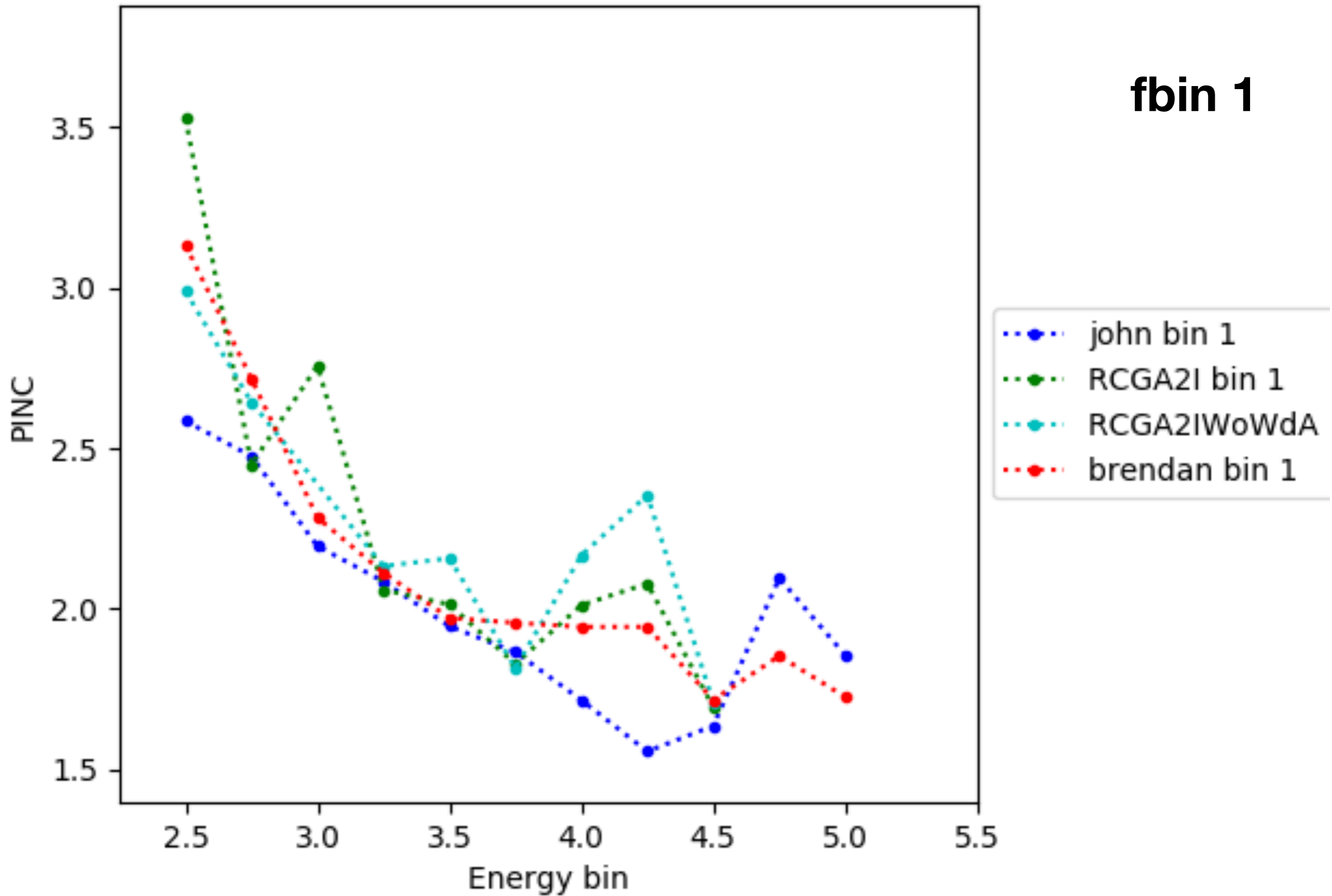
2 Inputs

1. $\log_{10}(\text{rec.CxPE40}/\text{rec.nHitSP20})$
2. rec.PINC

Name	Use delAngle	Use weight
RCGA2I	Yes	Yes
RCGA2IWoW	Yes	No
RCGA2IWodA	No	Yes
RCGA2IWoWdA	No	No

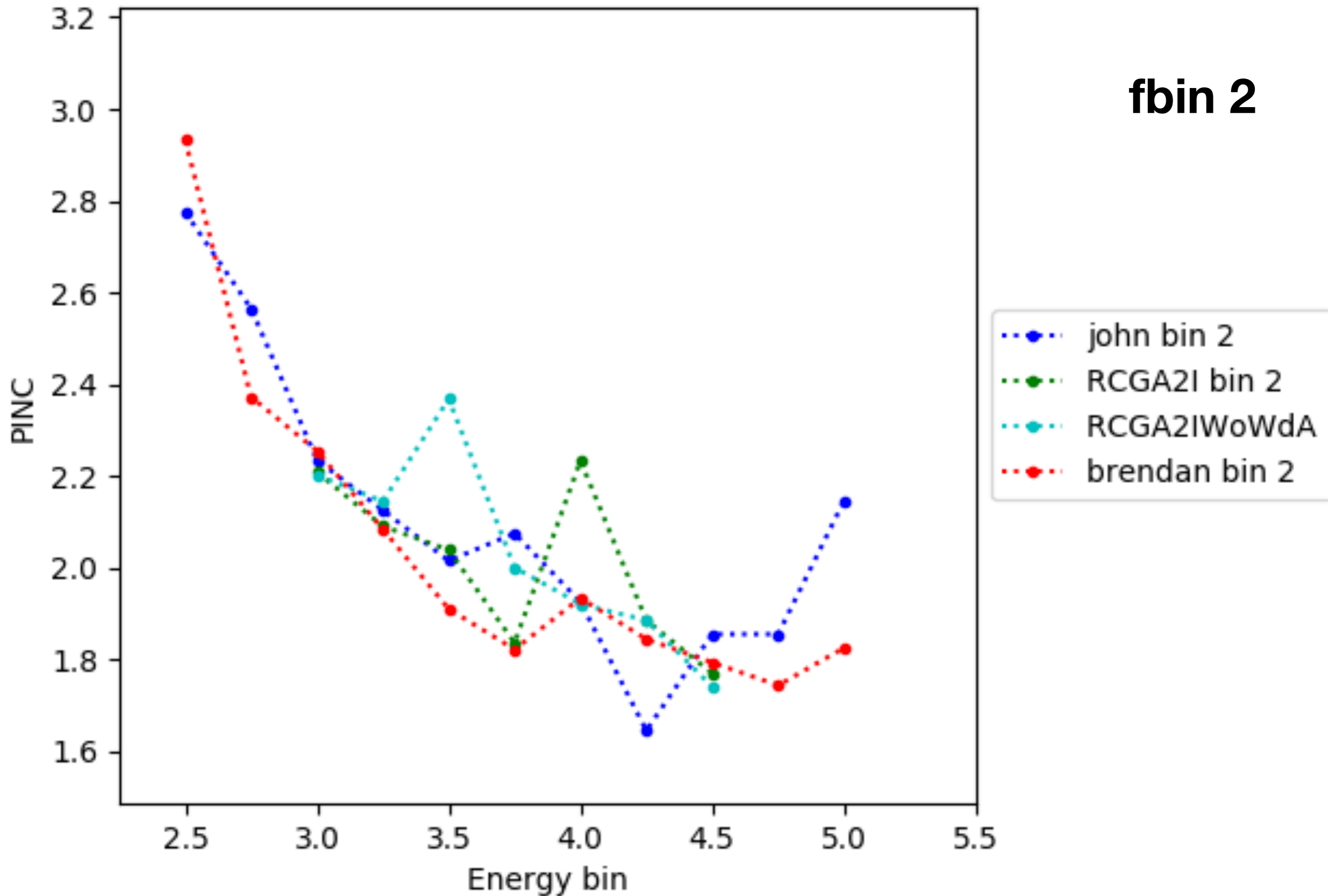
PINC

fbin 1



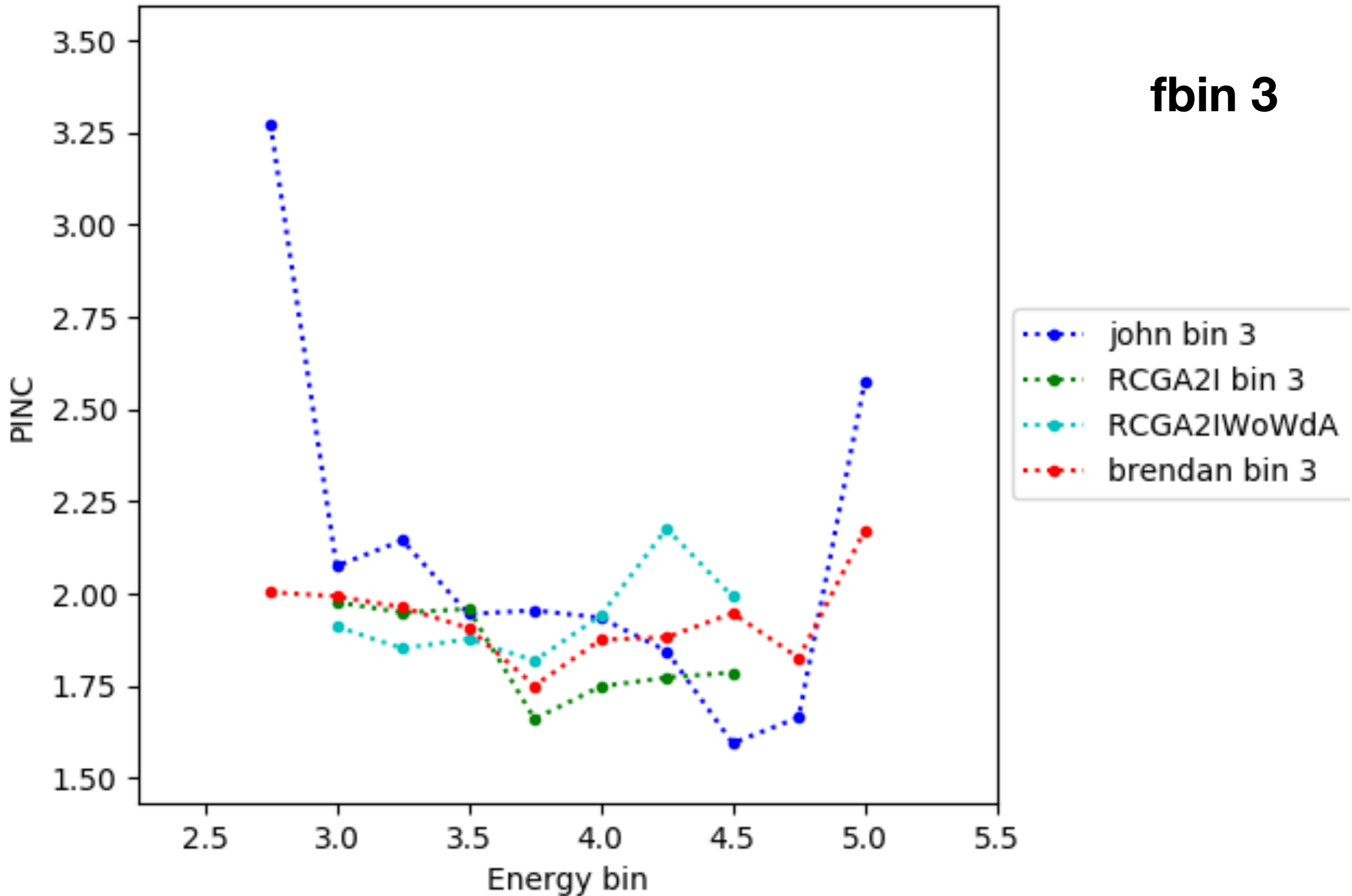
PINC

fbin 2



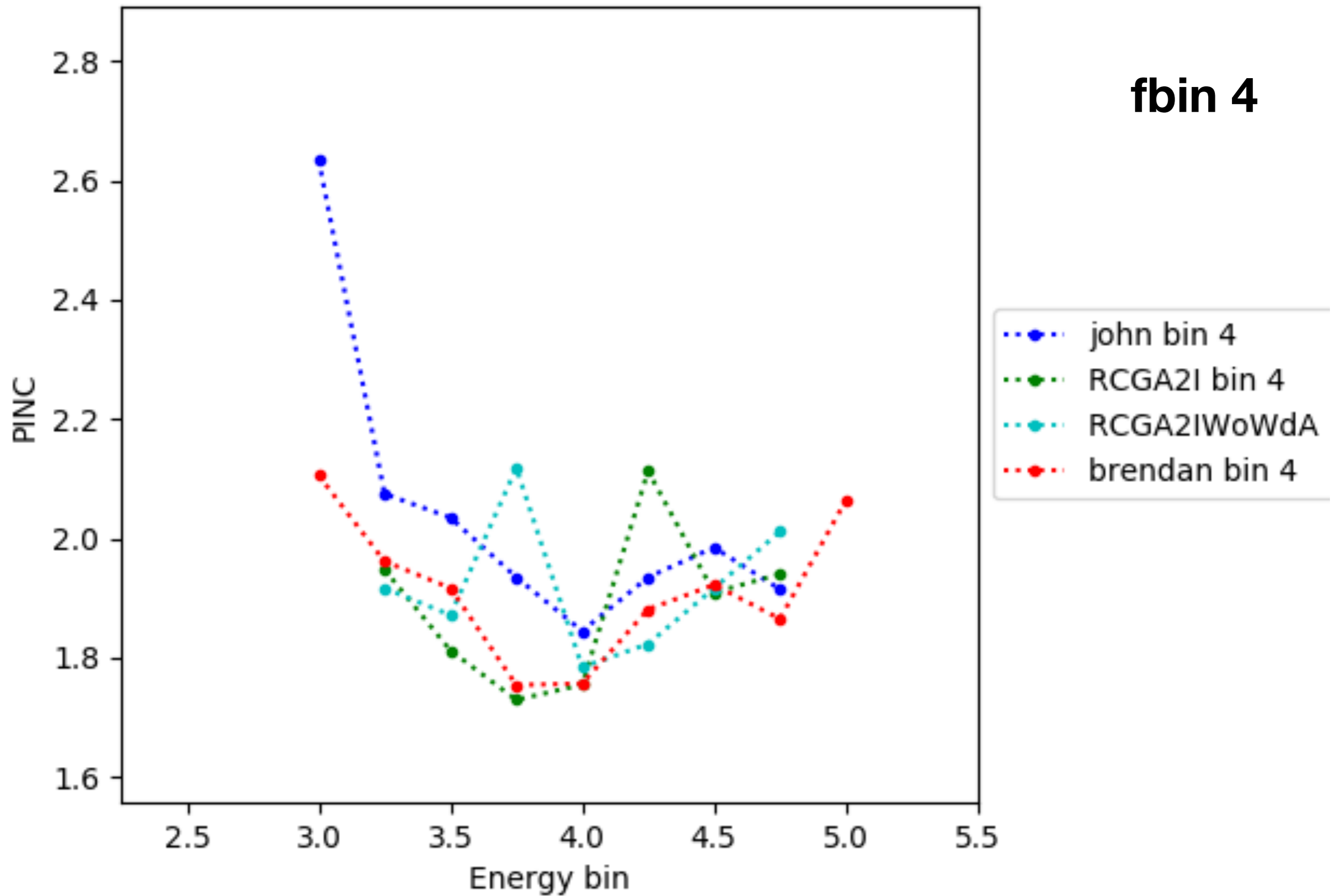
PINC

fbin 3



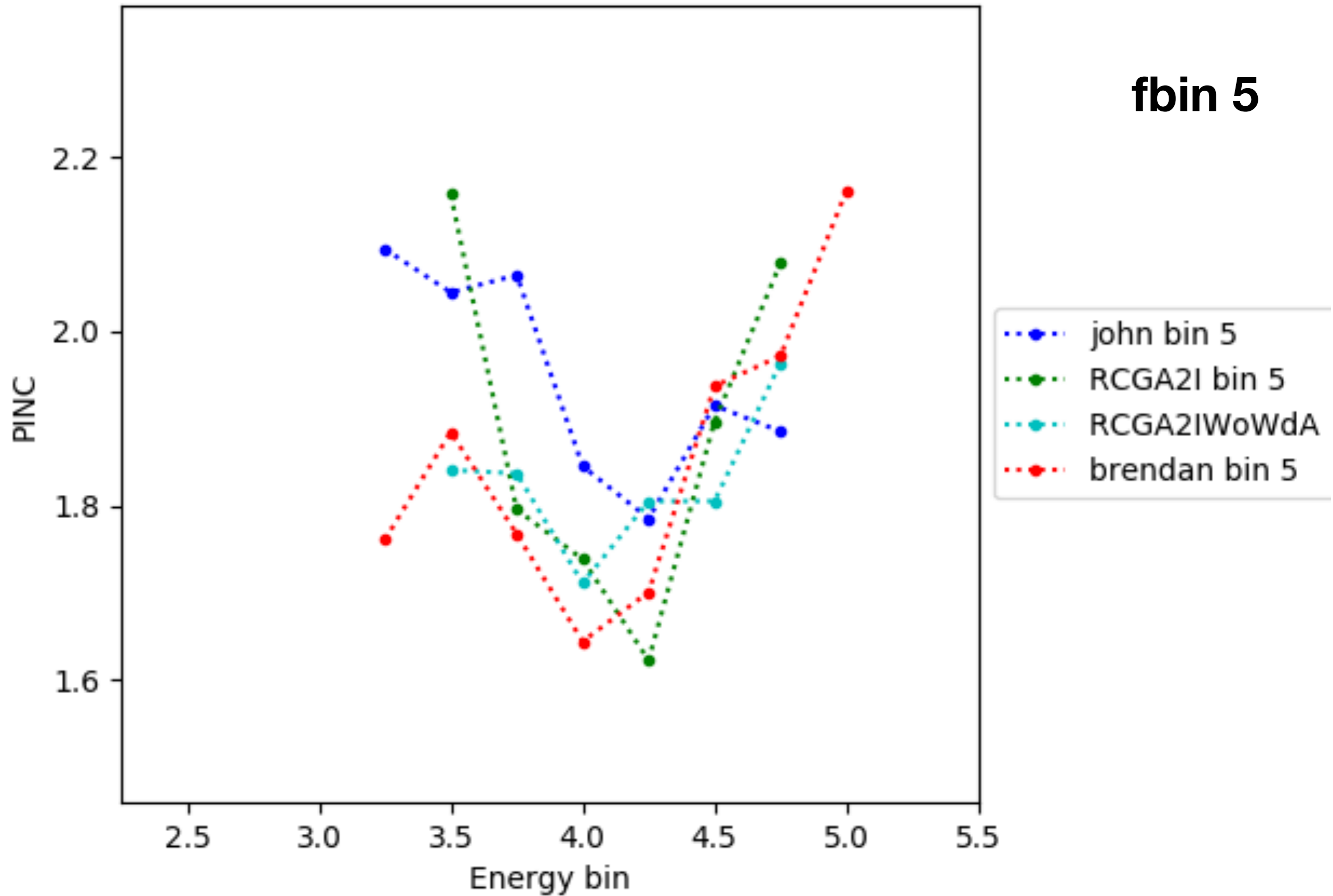
PINC

fbin 4



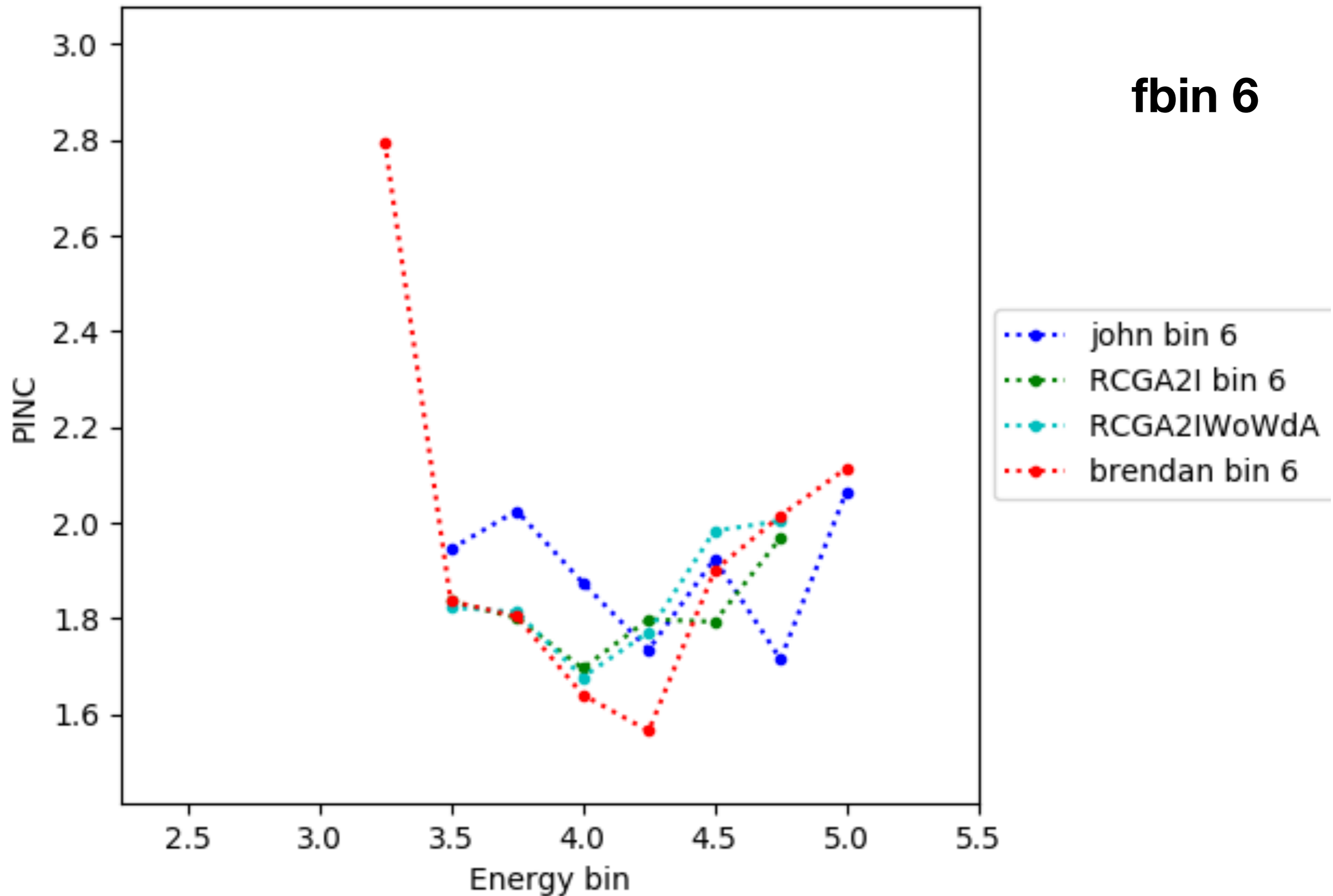
PINC

fbin 5



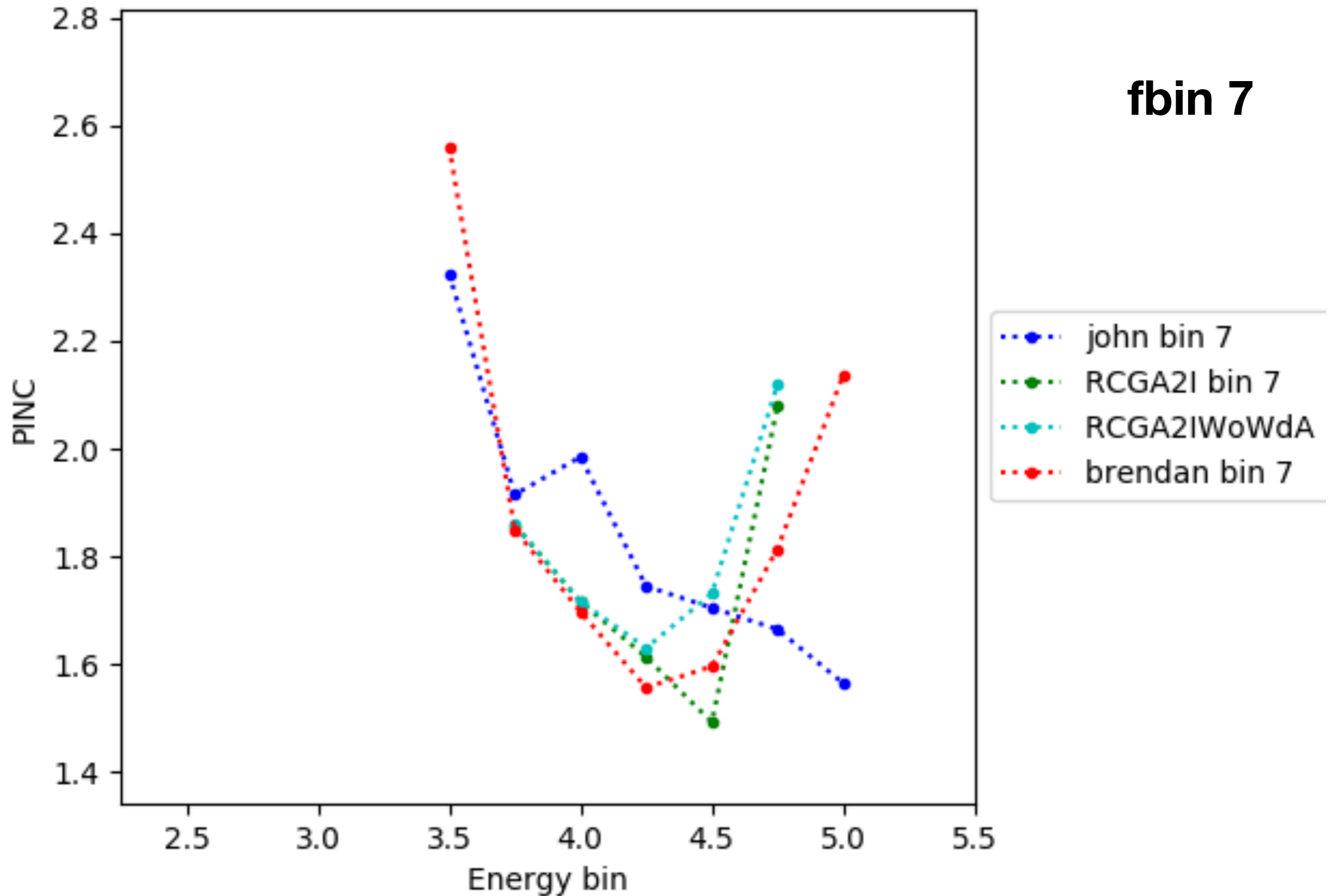
PINC

fbin 6



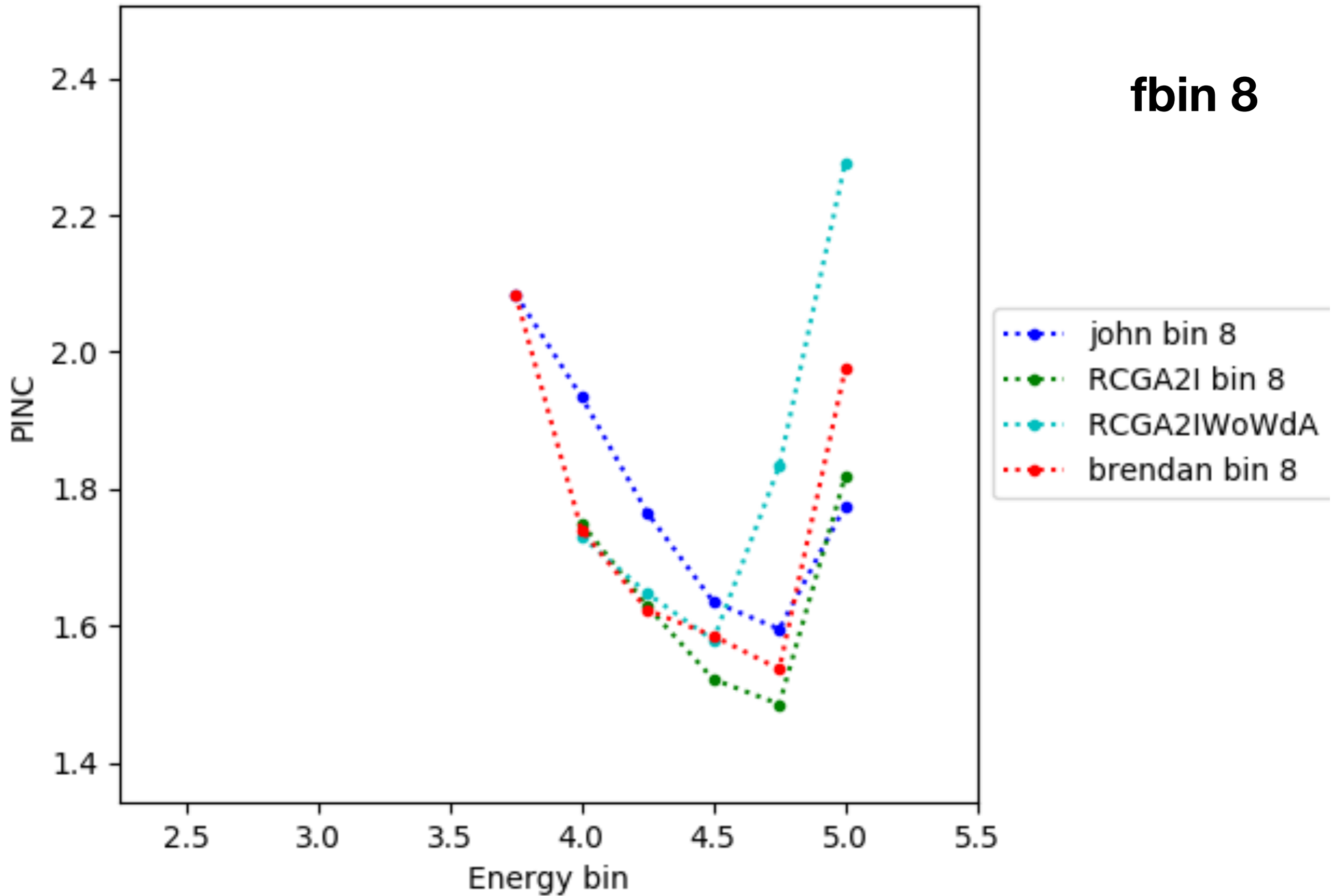
PINC

fbin 7



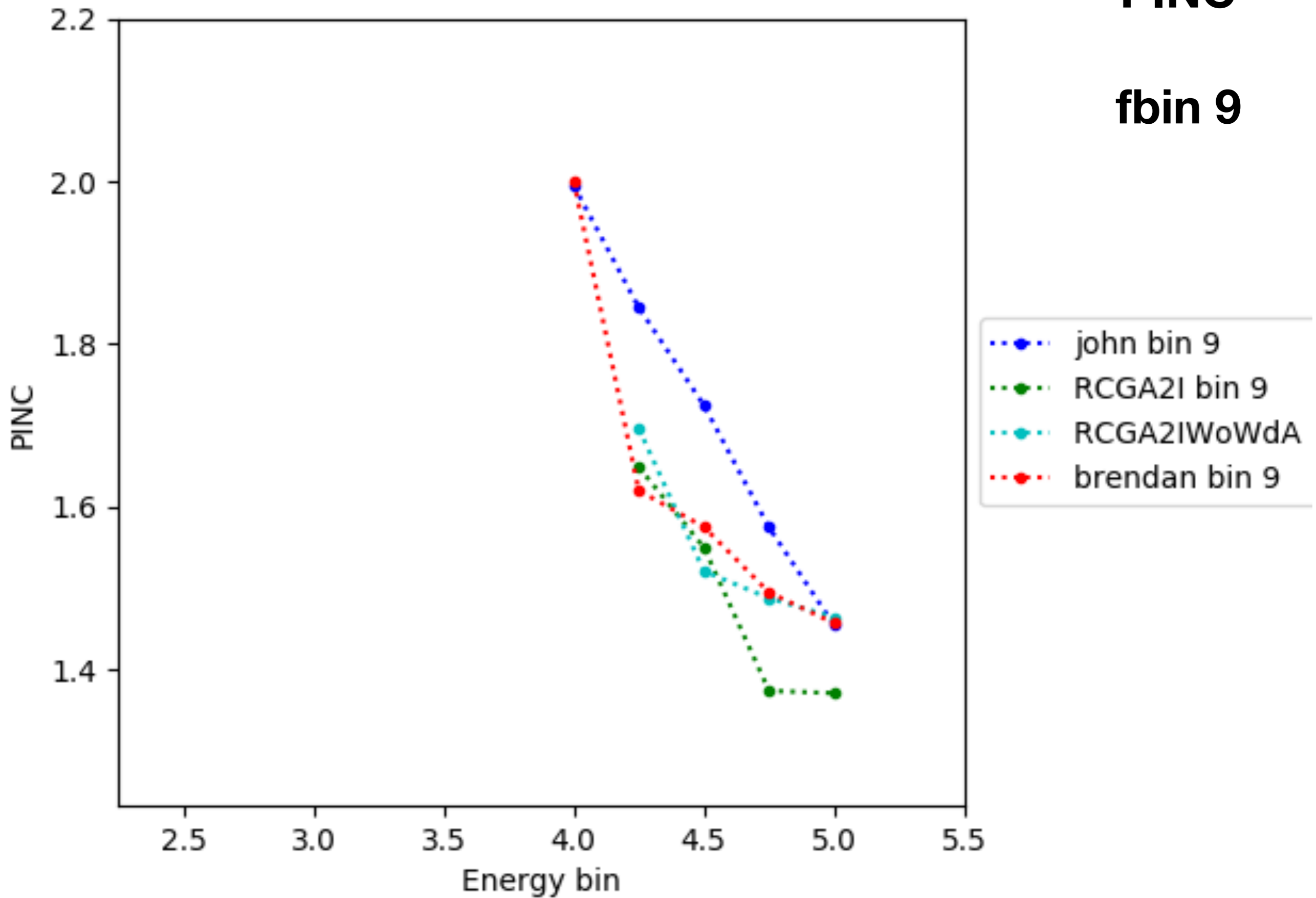
PINC

fbin 8



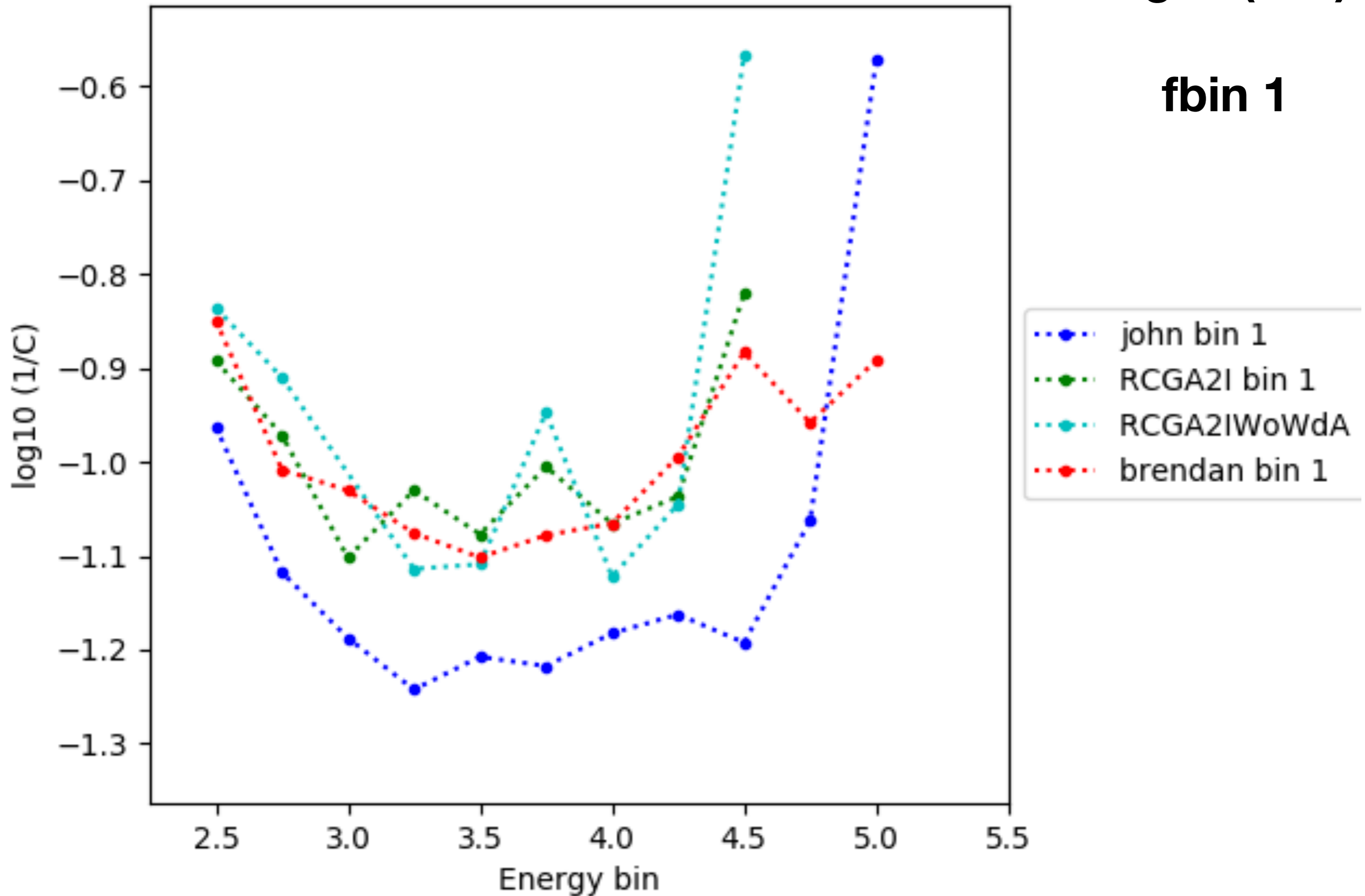
PINC

fbin 9



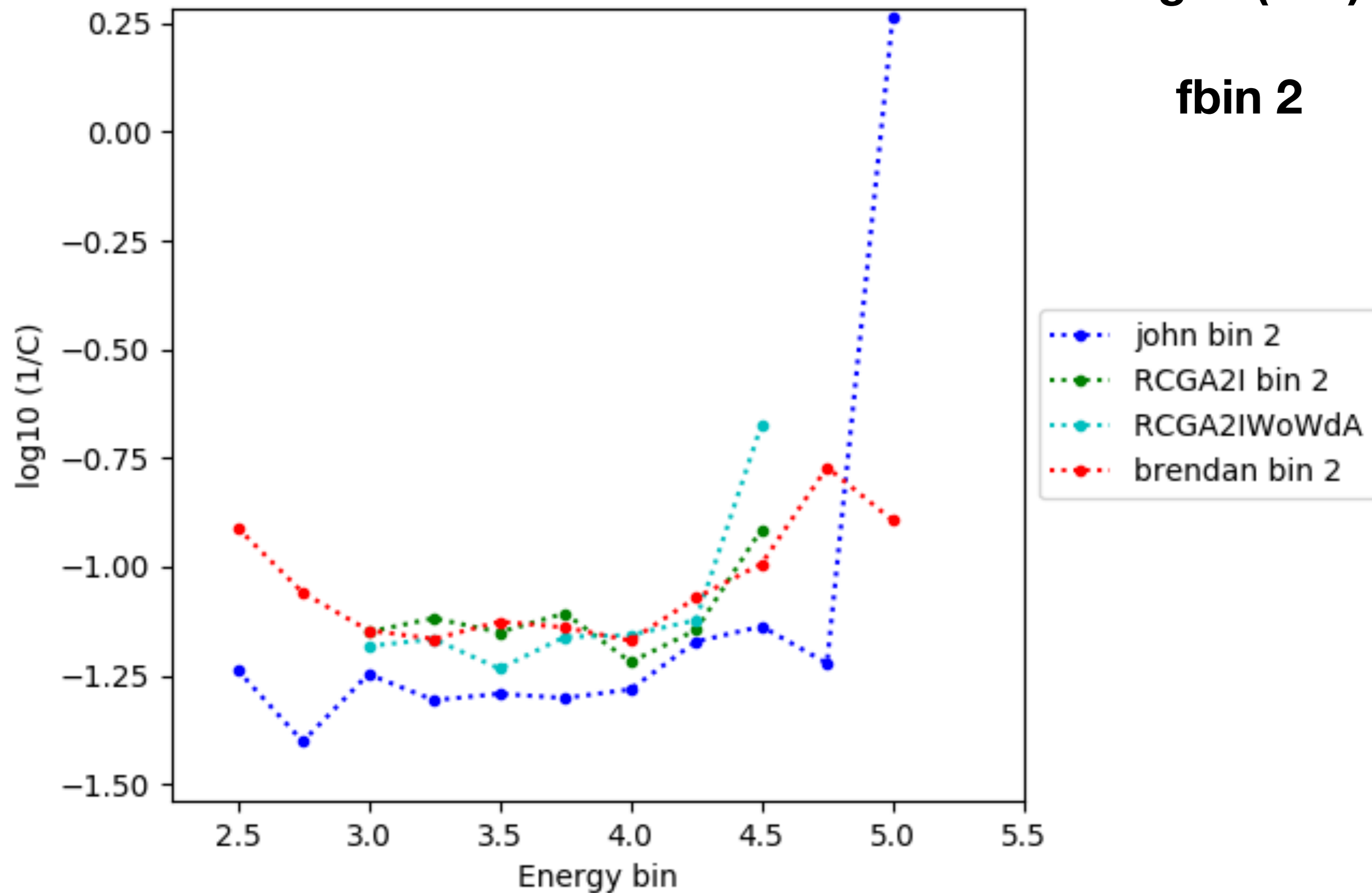
log10 (1/C)

fbin 1



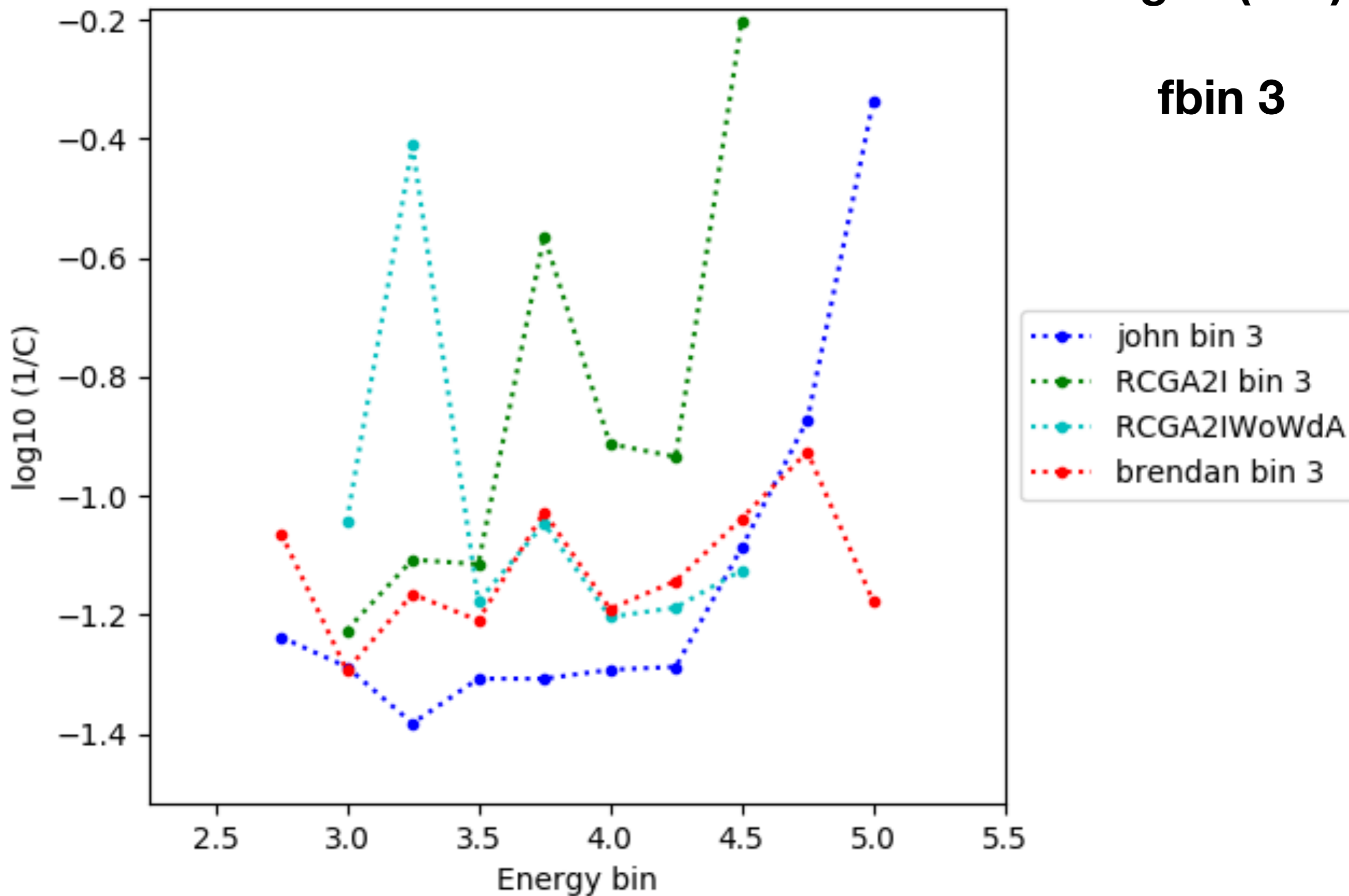
log10 (1/C)

fbin 2



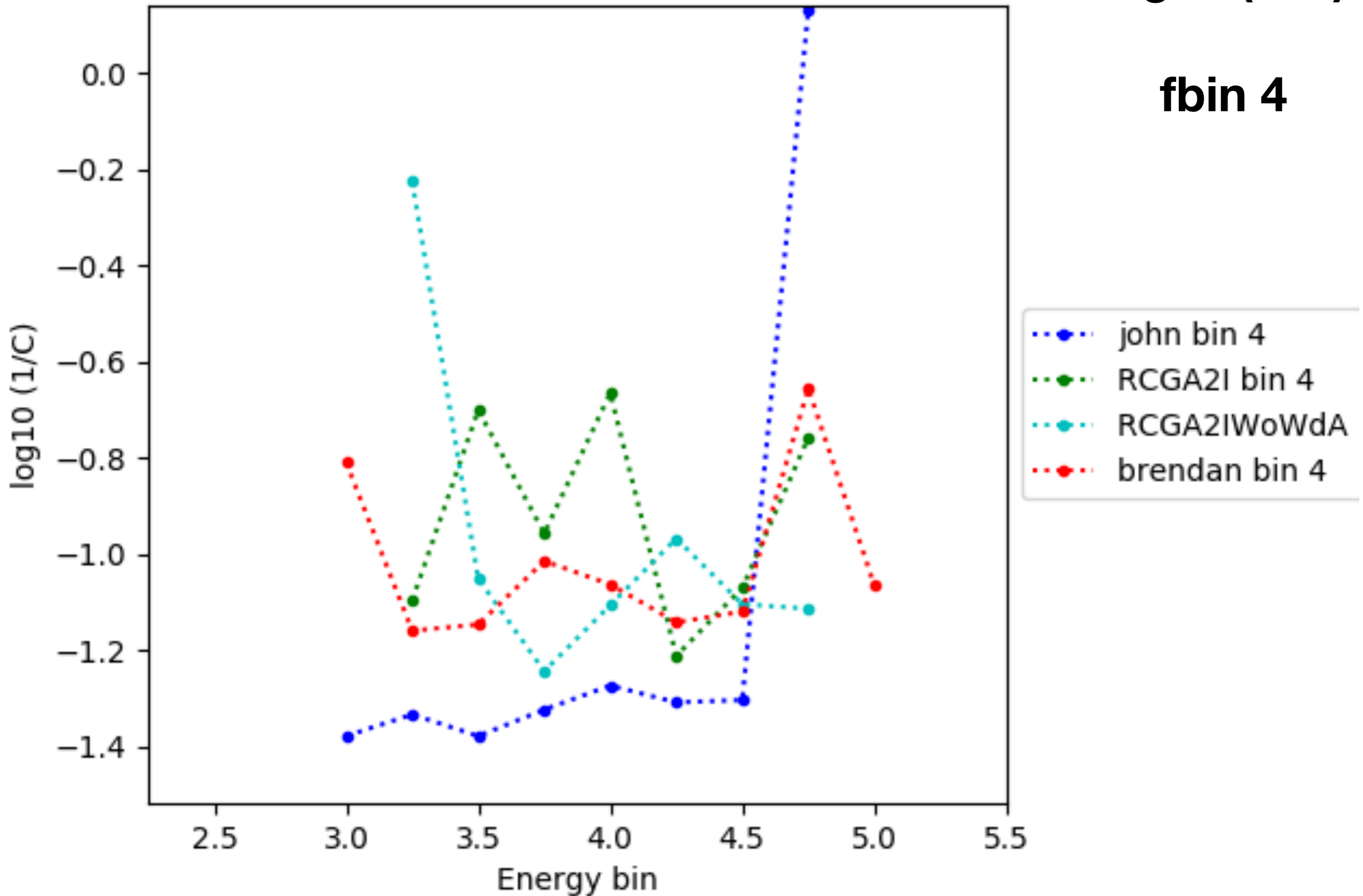
log10 (1/C)

fbin 3



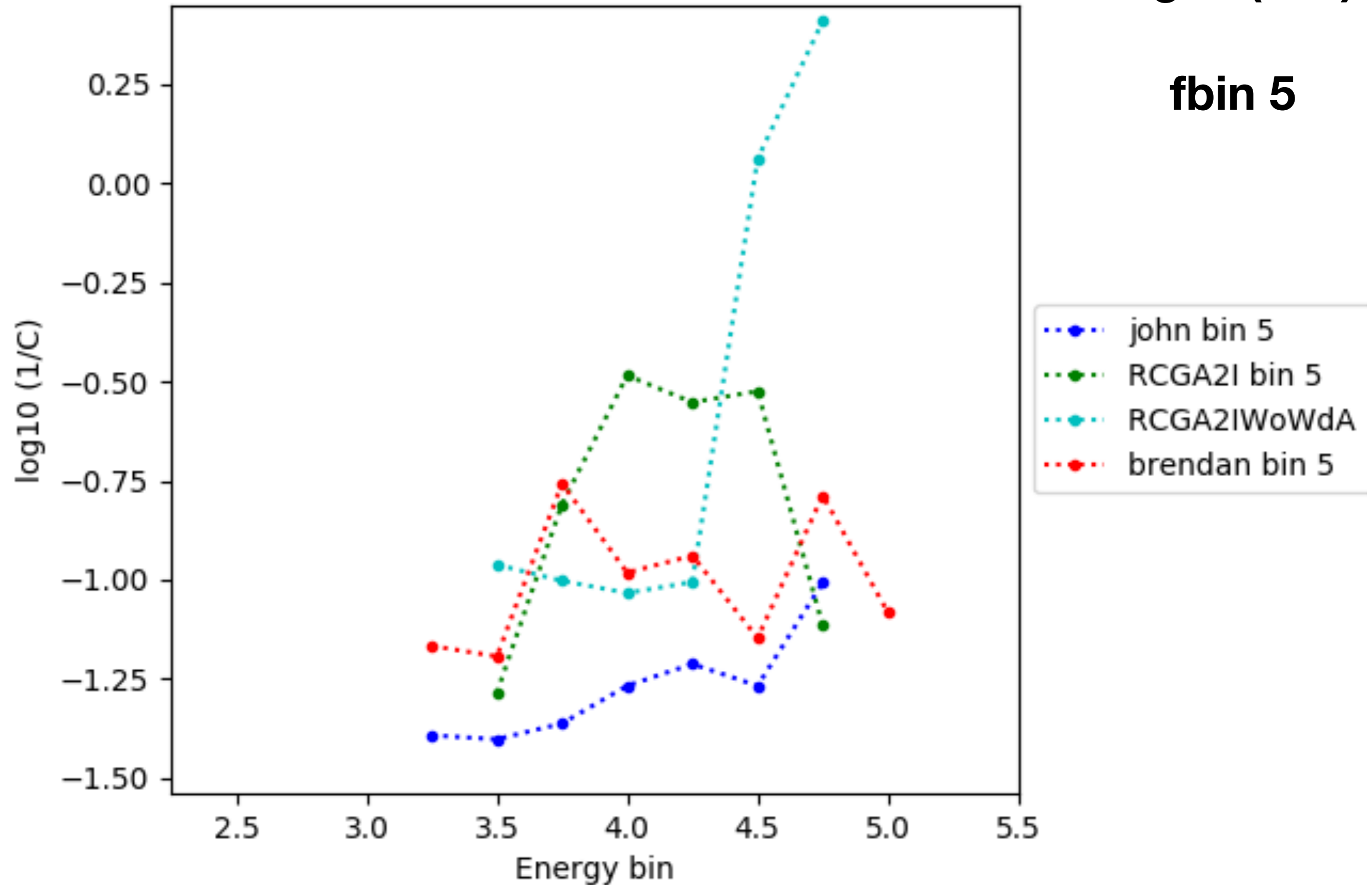
log10 (1/C)

fbin 4



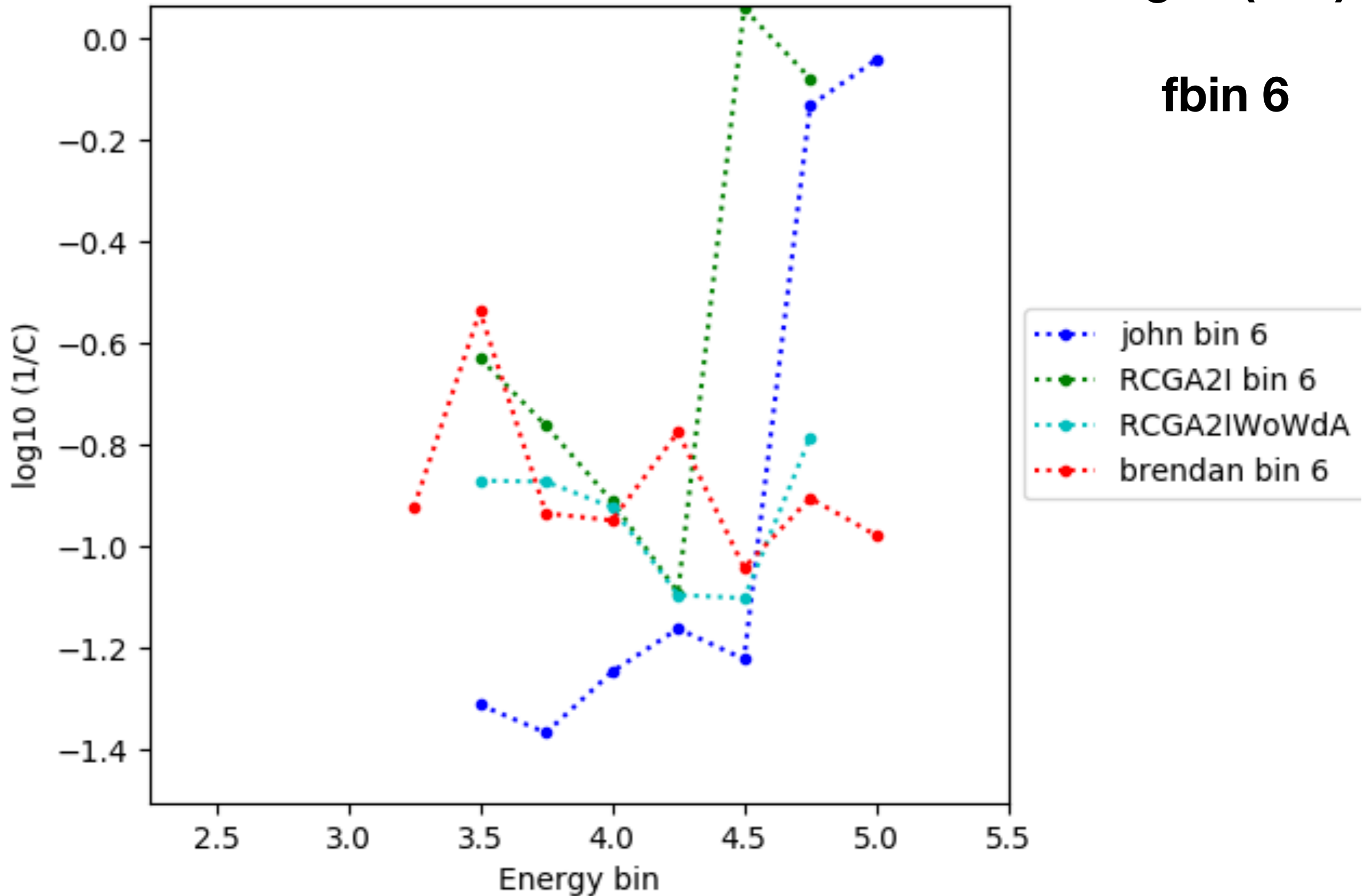
log10 (1/C)

fbin 5



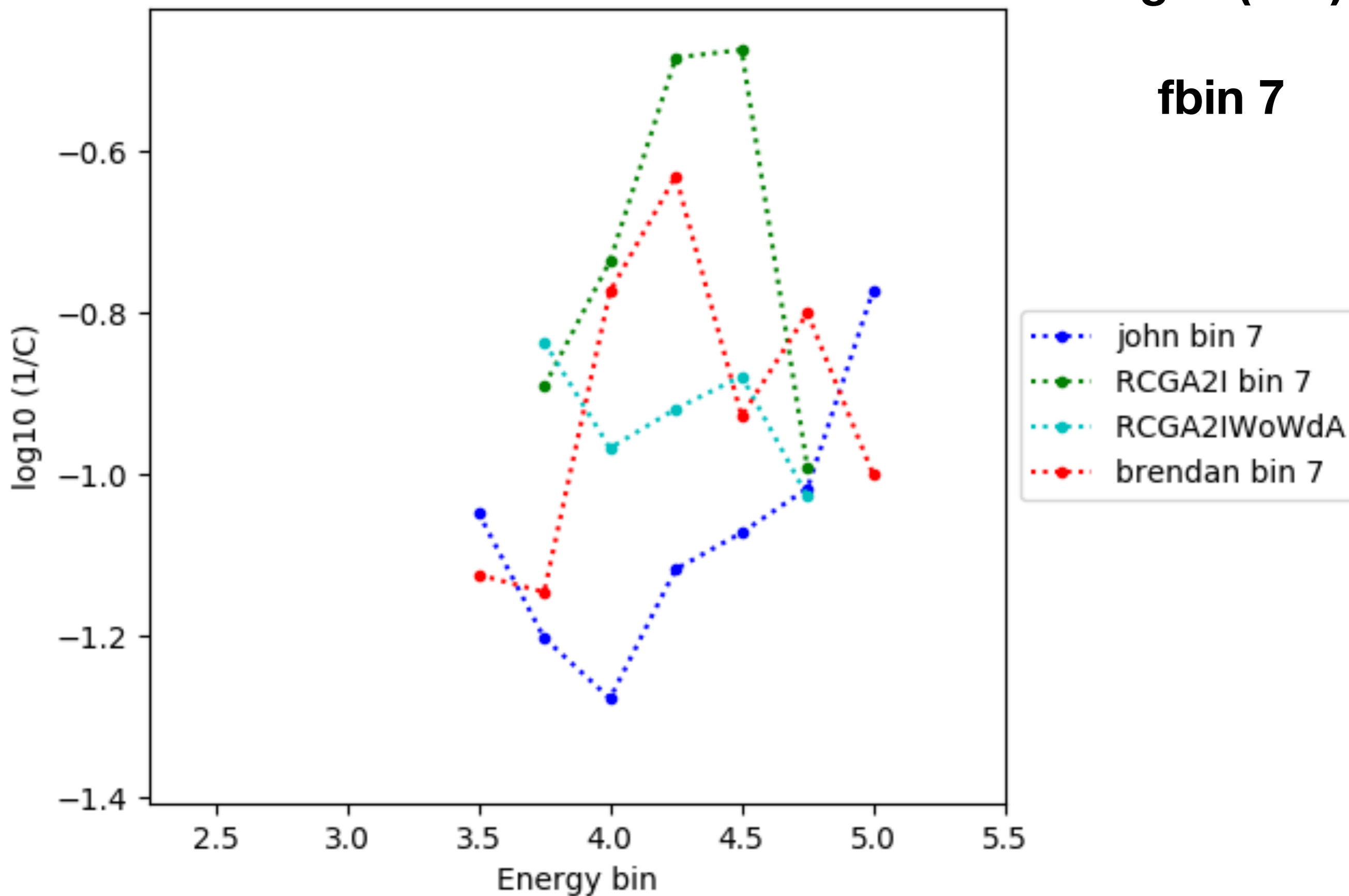
log10 (1/C)

fbin 6



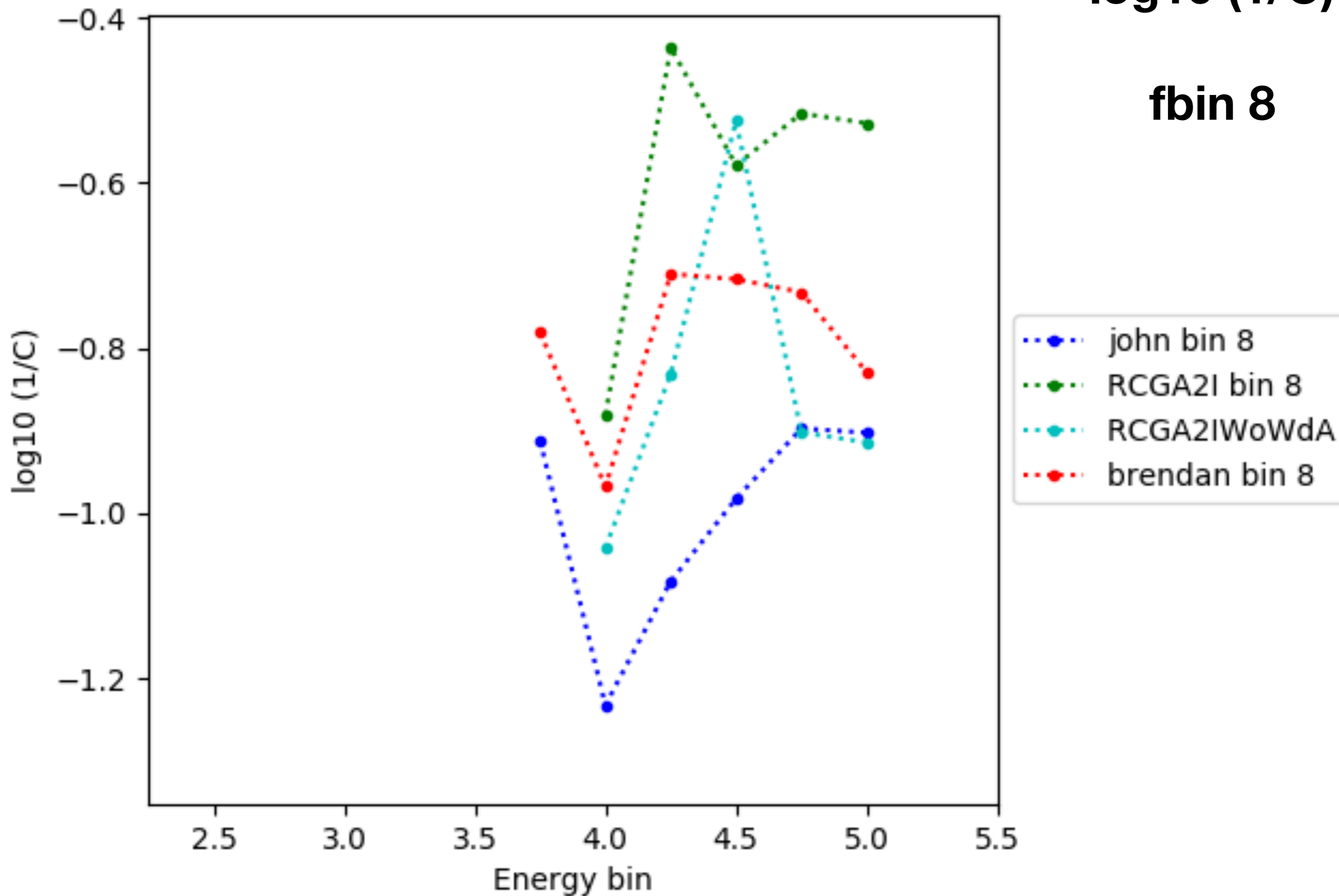
log10 (1/C)

fbin 7



log10 (1/C)

fbin 8



log10 (1/C)

fbin 9

