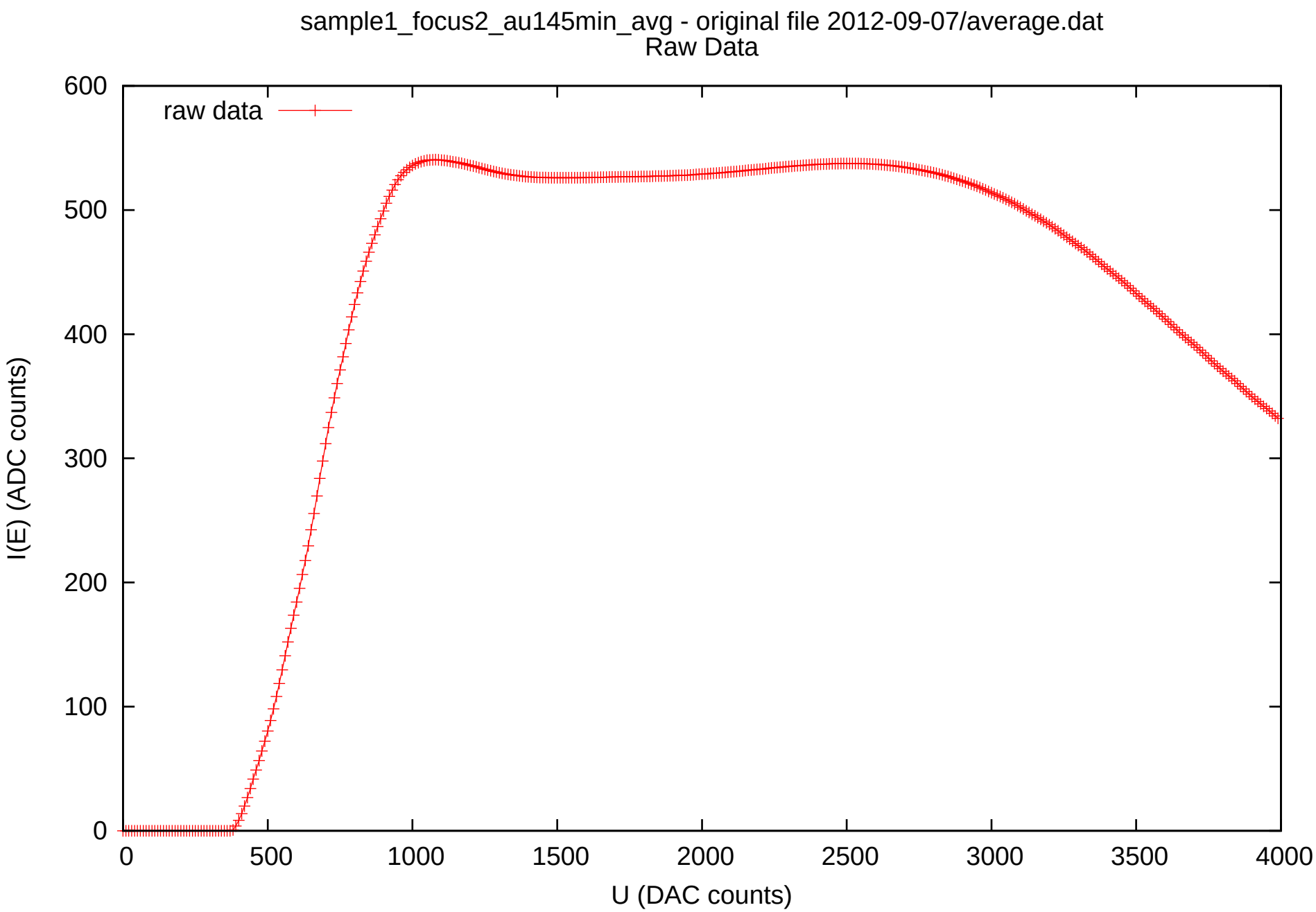
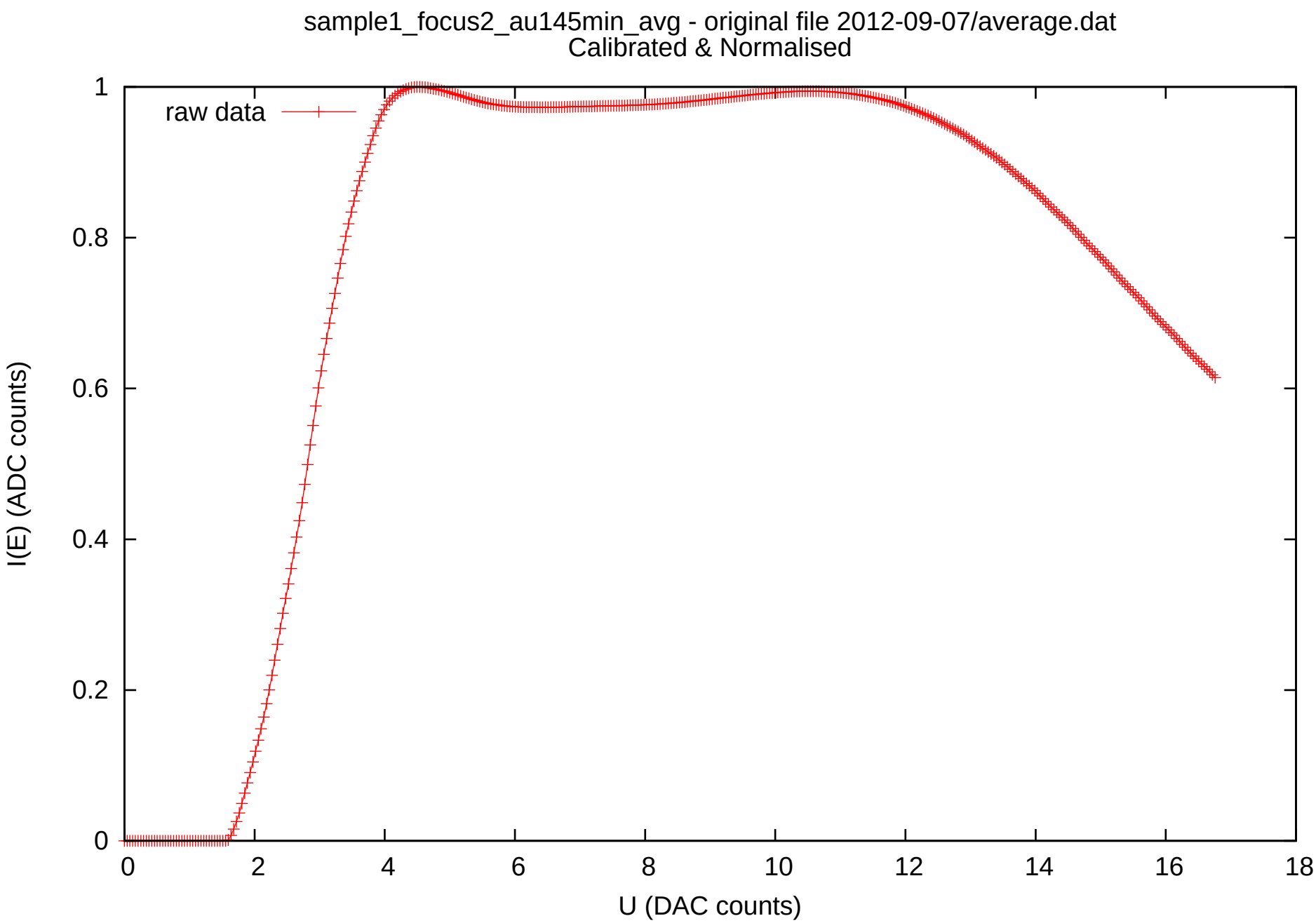
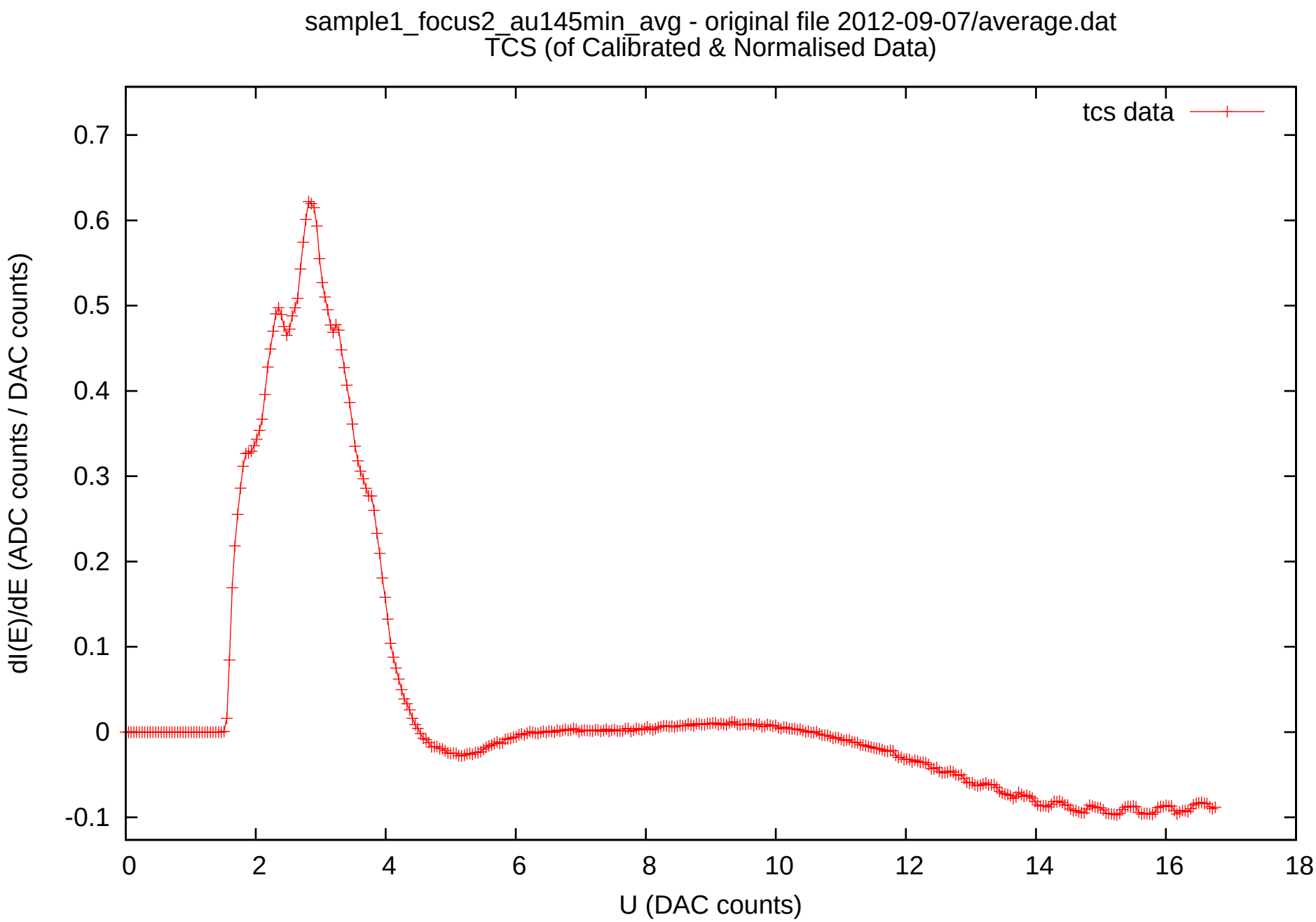
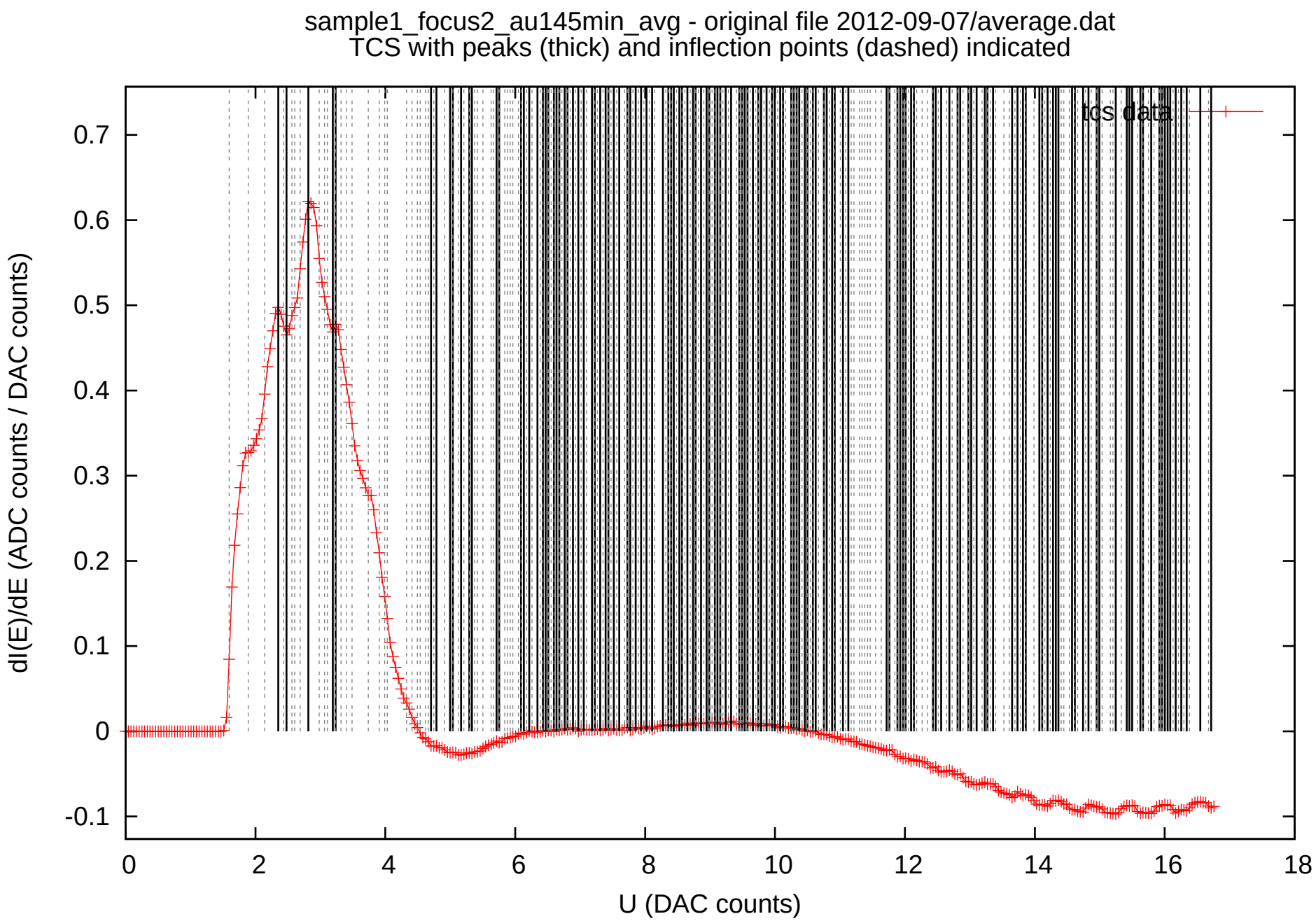
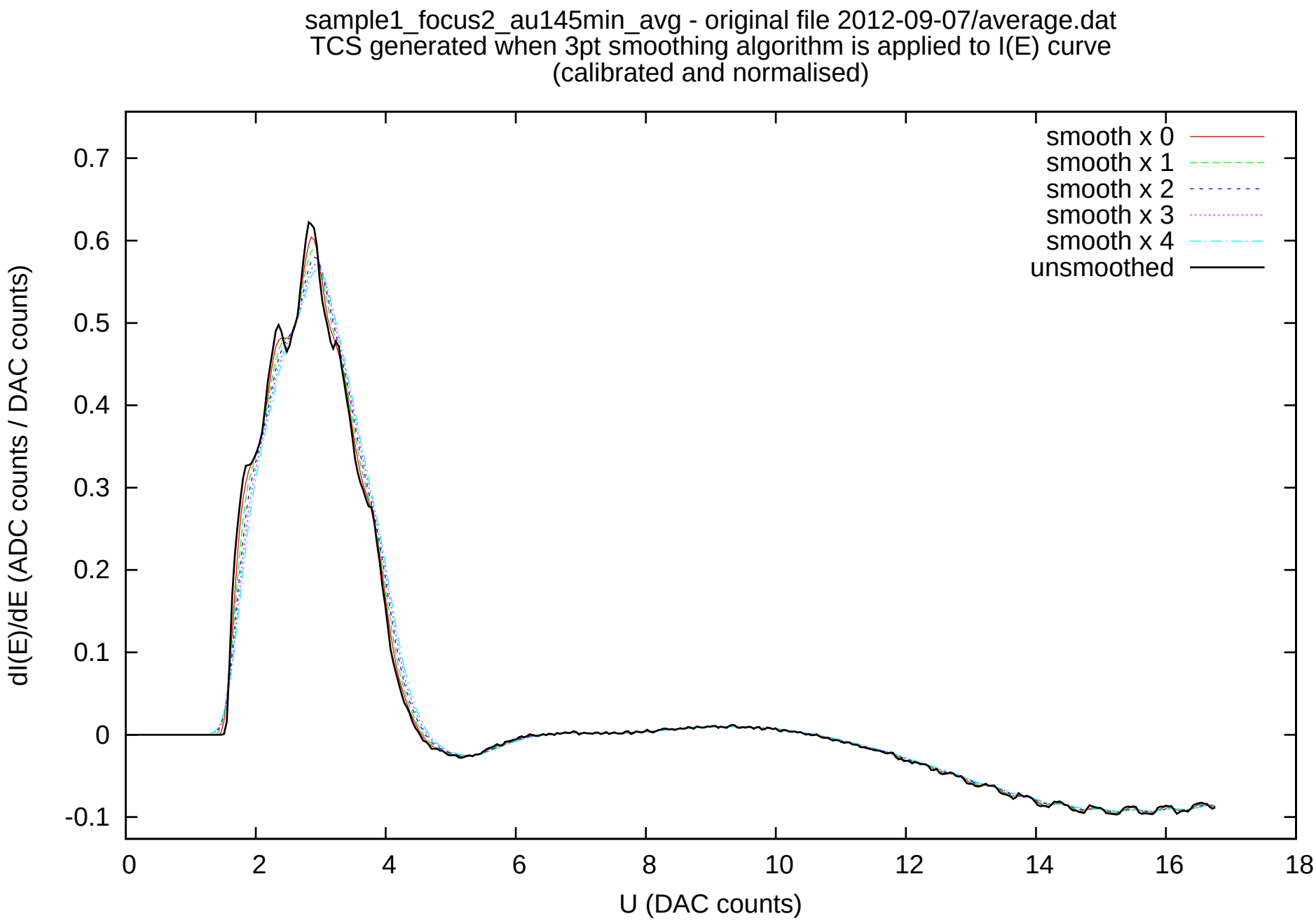
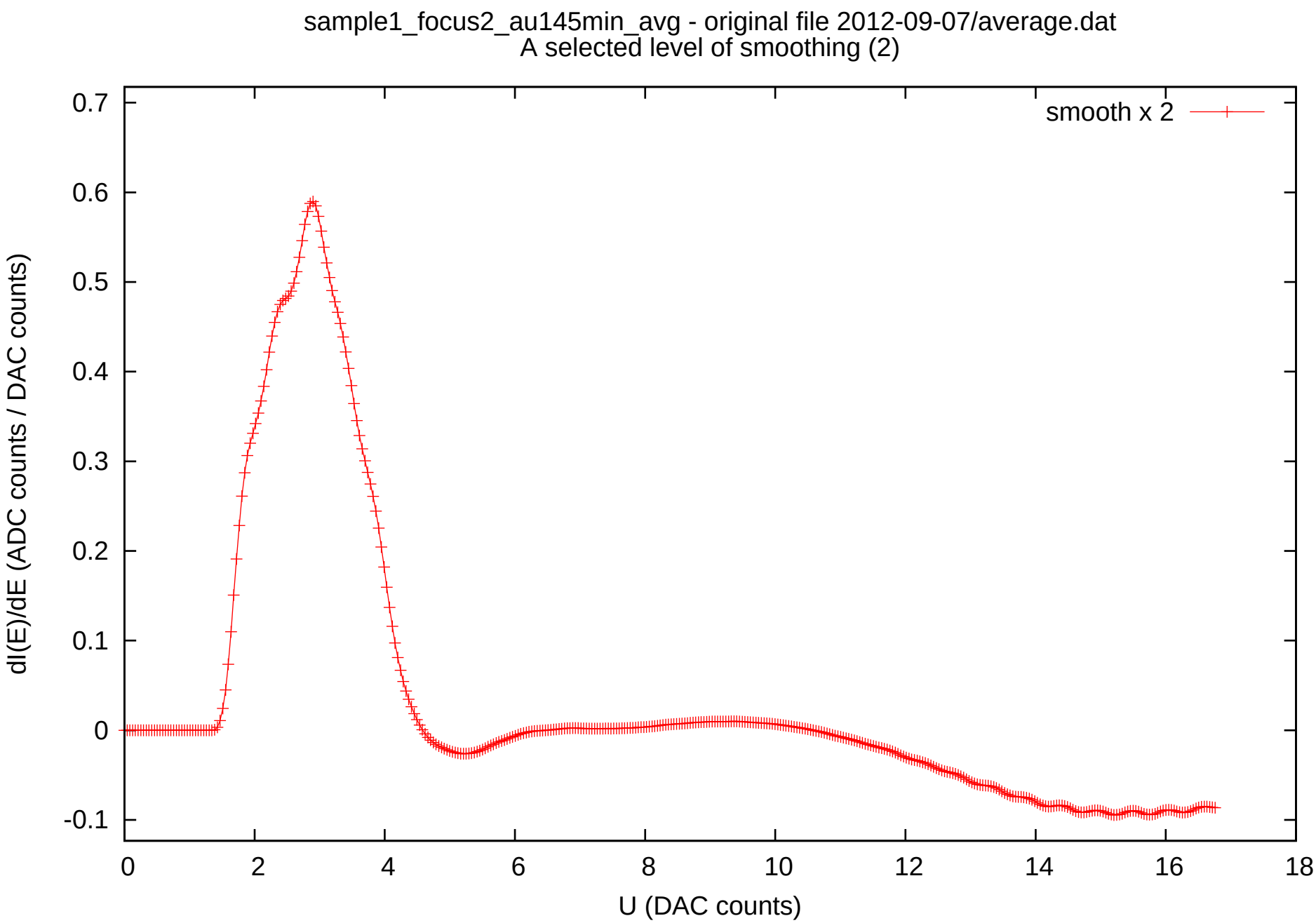

sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Raw Data
raw data
I(E) (ADC counts)
U (DAC counts)
0
100
200
300
400
500
600
0
500
1000
1500
2000
2500
3000
3500
4000

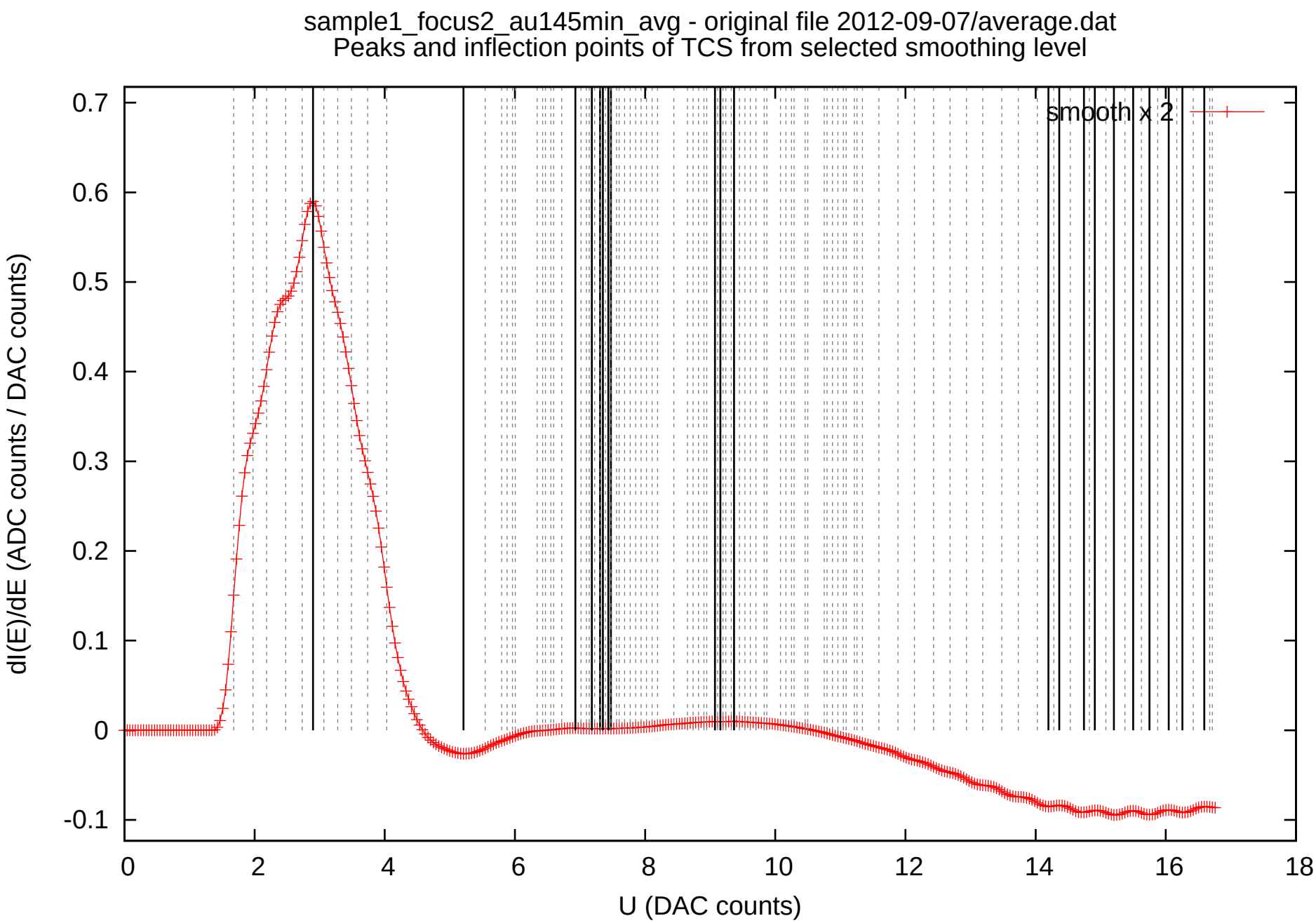

sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Calibrated & Normalised
raw data
I(E) (ADC counts)
U (DAC counts)
0
0.2
0.4
0.6
0.8
1
0
2
4
6
8
10
12
14
16
18

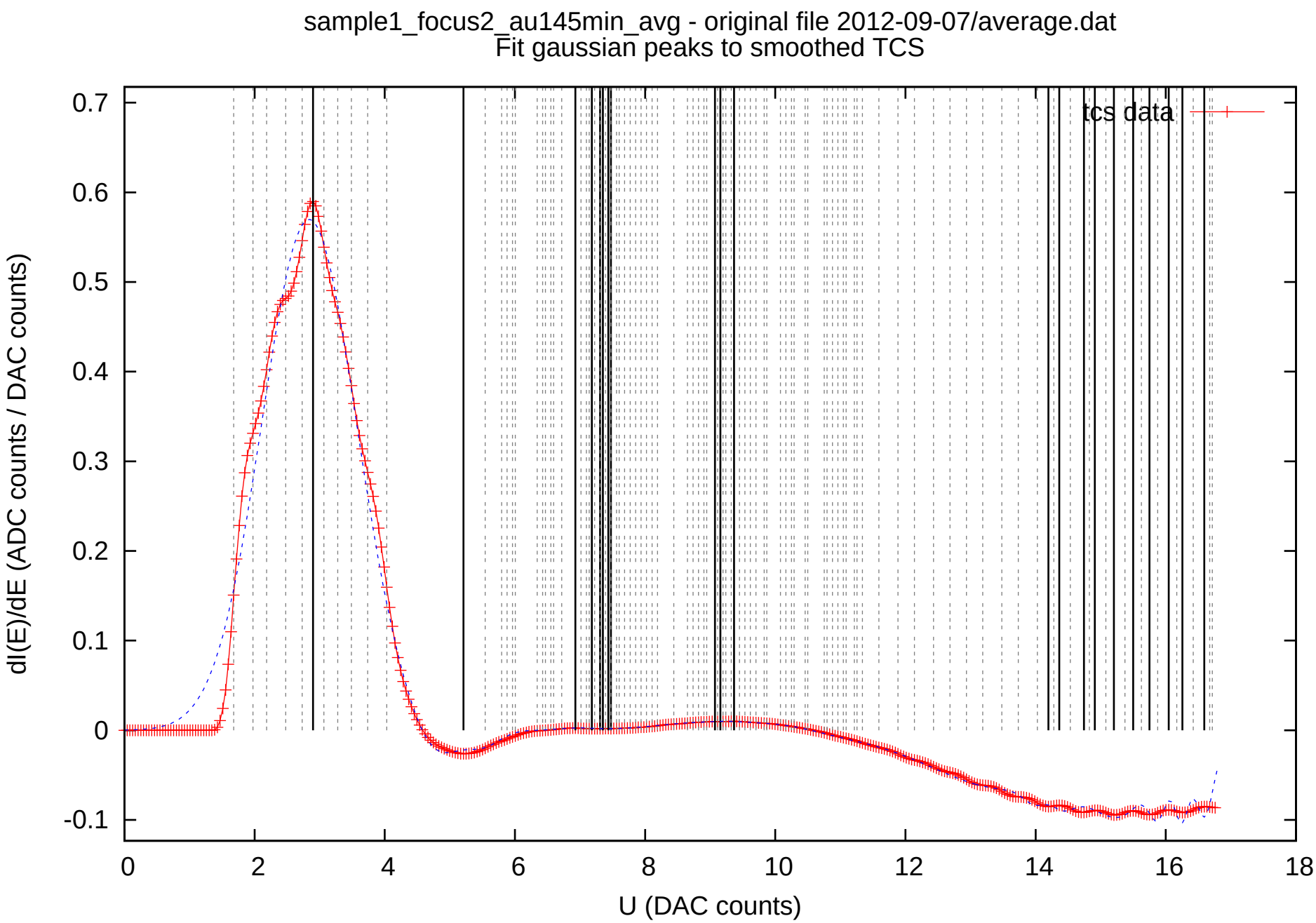

sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
TCS (of Calibrated & Normalised Data)
tcs data
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
2
4
6
8
10
12
14
16
18

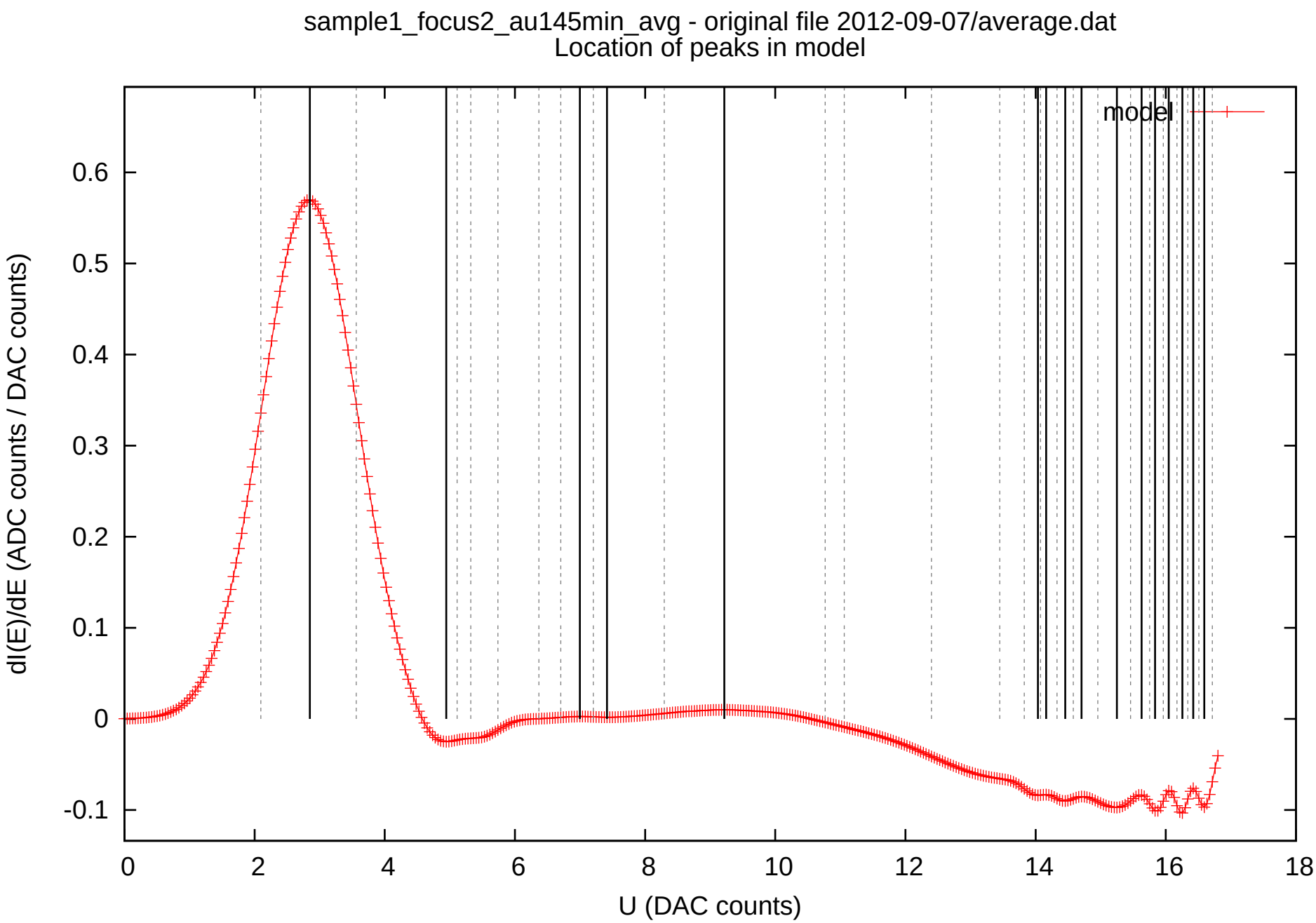

sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
TCS with peaks (thick) and inflection points (dashed) indicated
tcs data
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
2
4
6
8
10
12
14
16
18

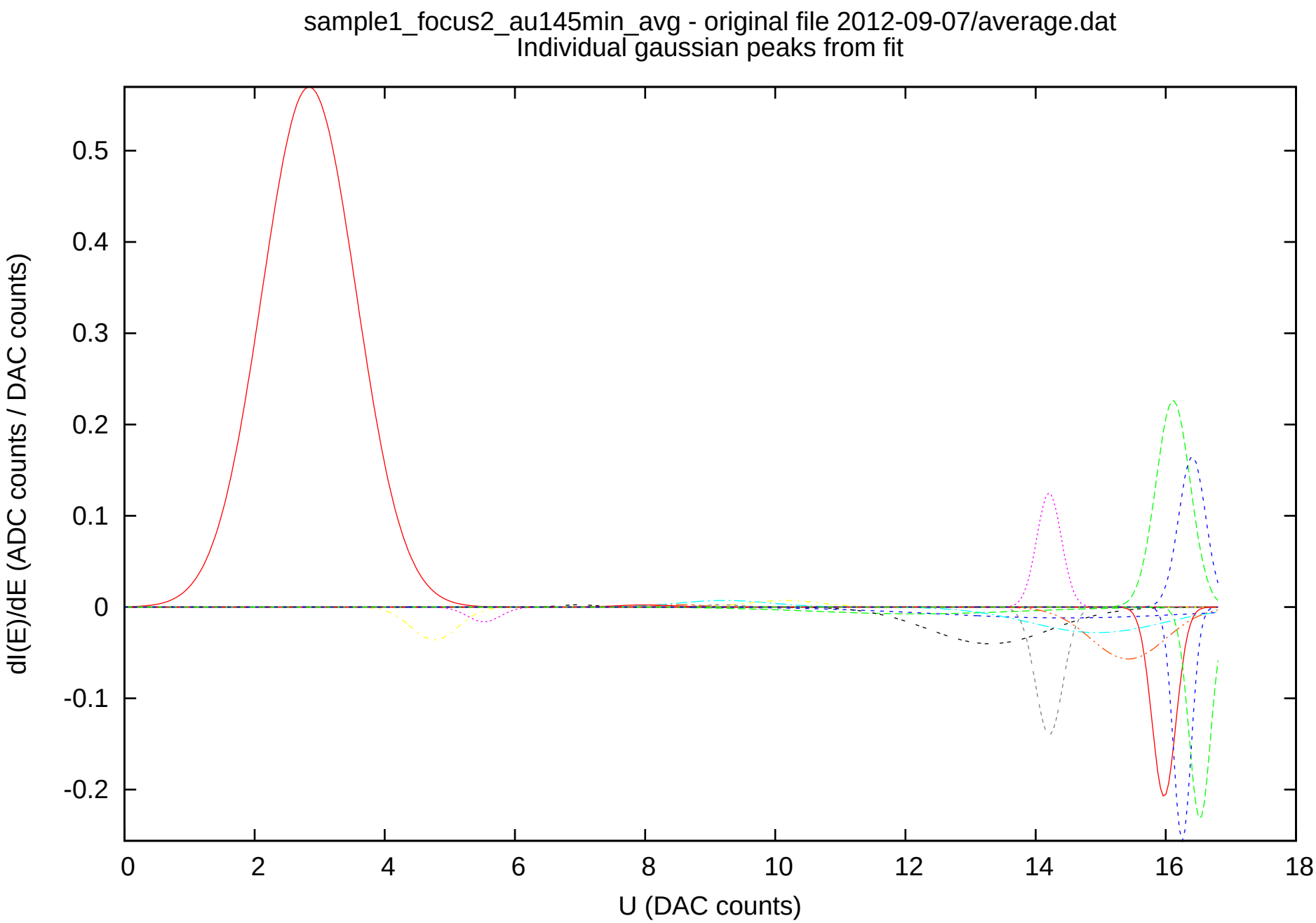

sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
TCS generated when 3pt smoothing algorithm is applied to I(E) curve
(calibrated and normalised)
smooth x 0
smooth x 1
smooth x 2
smooth x 3
smooth x 4
unsmoothed
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
2
4
6
8
10
12
14
16
18

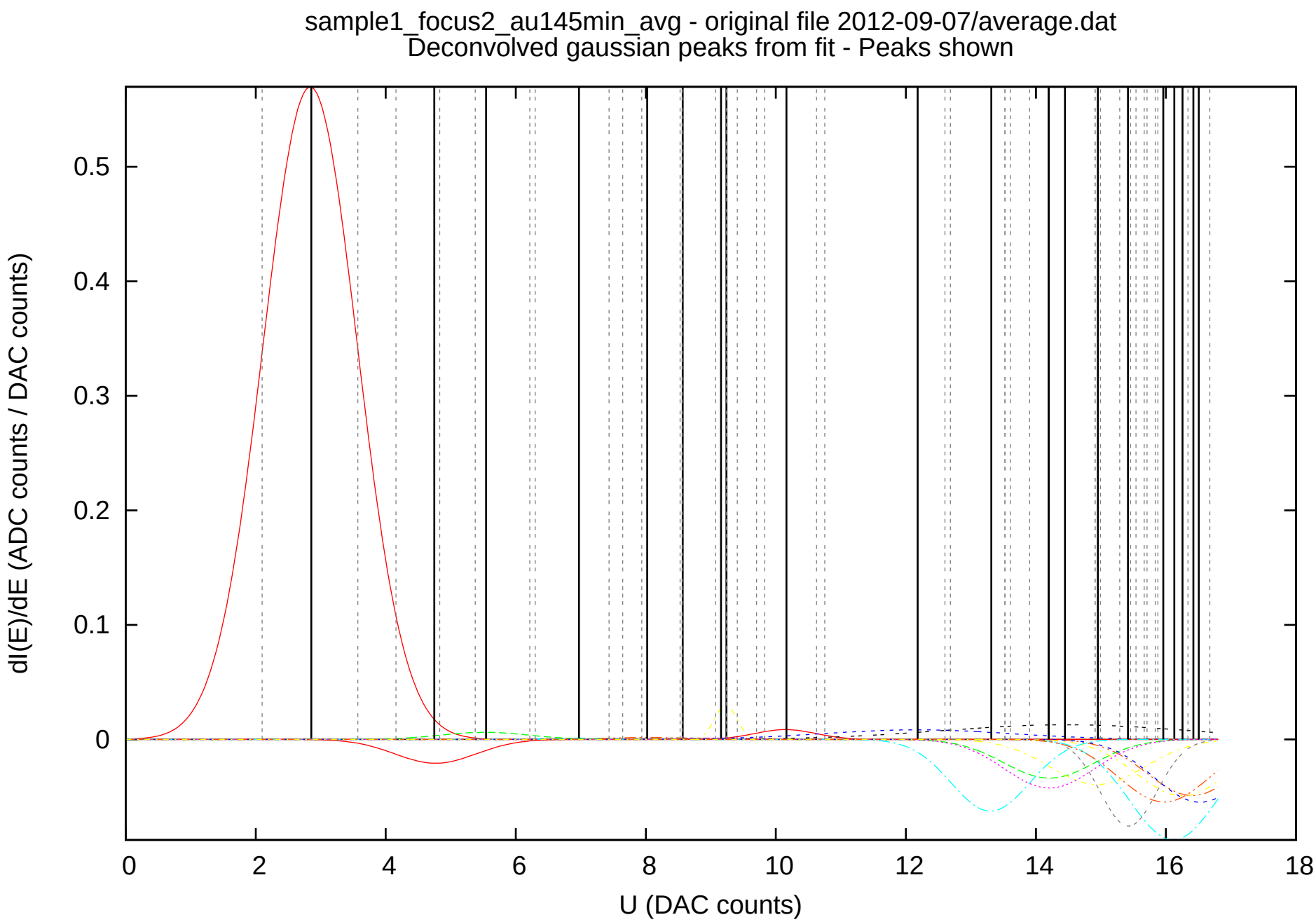

sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
A selected level of smoothing (2)
smooth x 2
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
2
4
6
8
10
12
14
16
18

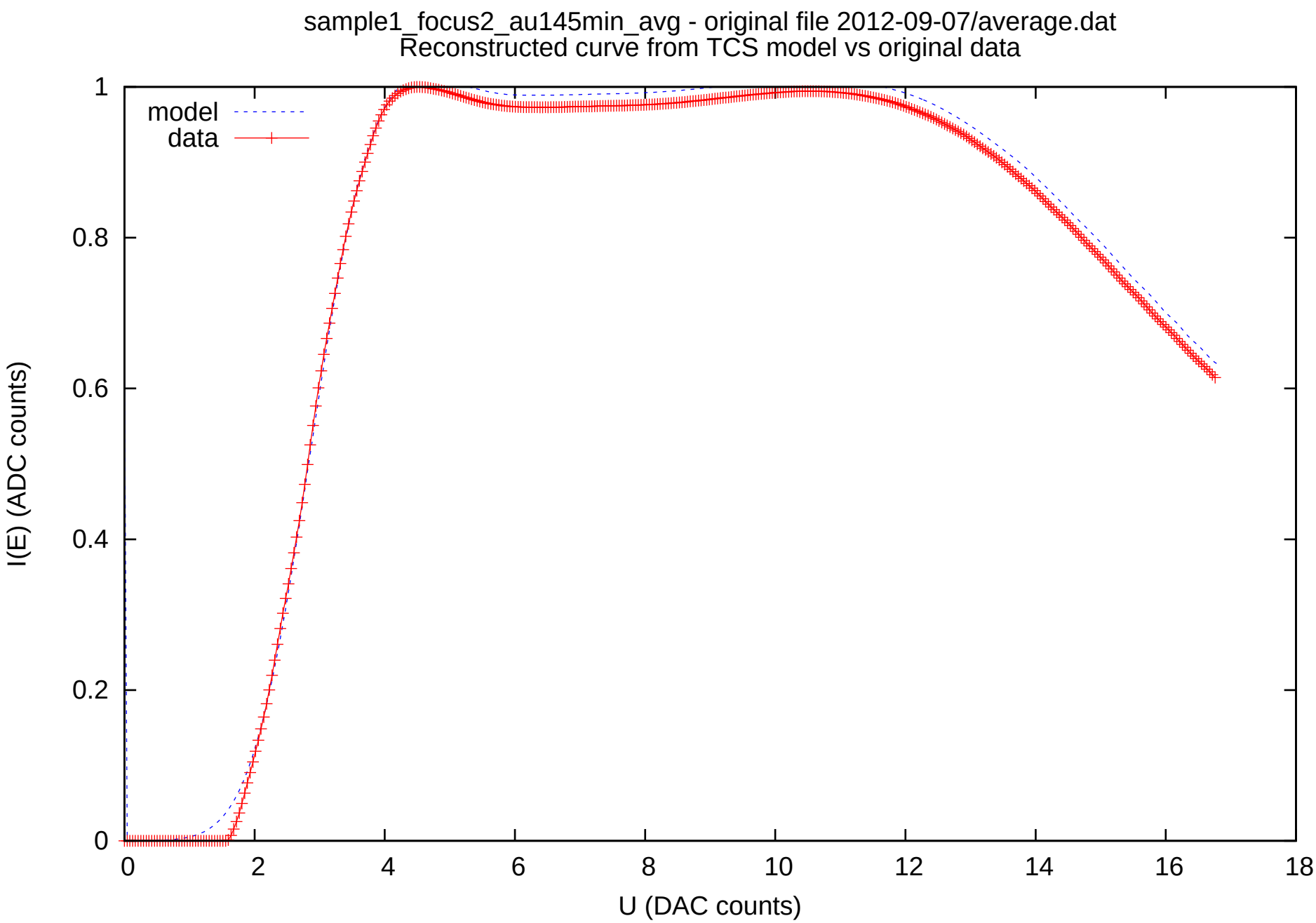

sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Peaks and inflection points of TCS from selected smoothing level
smooth x 2
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
2
4
6
8
10
12
14
16
18


sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Fit gaussian peaks to smoothed TCS
tcs data
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
2
4
6
8
10
12
14
16
18


sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Location of peaks in model
model
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
0
2
4
6
8
10
12
14
16
18


sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Individual gaussian peaks from fit
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
0
2
4
6
8
10
12
14
16
18


sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Deconvolved gaussian peaks from fit - Peaks shown
dI(E)/dE (ADC counts / DAC counts)
0.5
0.4
0.3
0.2
0.1
0
0
2
4
6
8
10
12
14
16
18
U (DAC counts)


sample1_focus2_au145min_avg - original file 2012-09-07/average.dat
Reconstructed curve from TCS model vs original data
model
data
I(E) (ADC counts)
U (DAC counts)
0
0.2
0.4
0.6
0.8
1
0
2
4
6
8
10
12
14
16
18