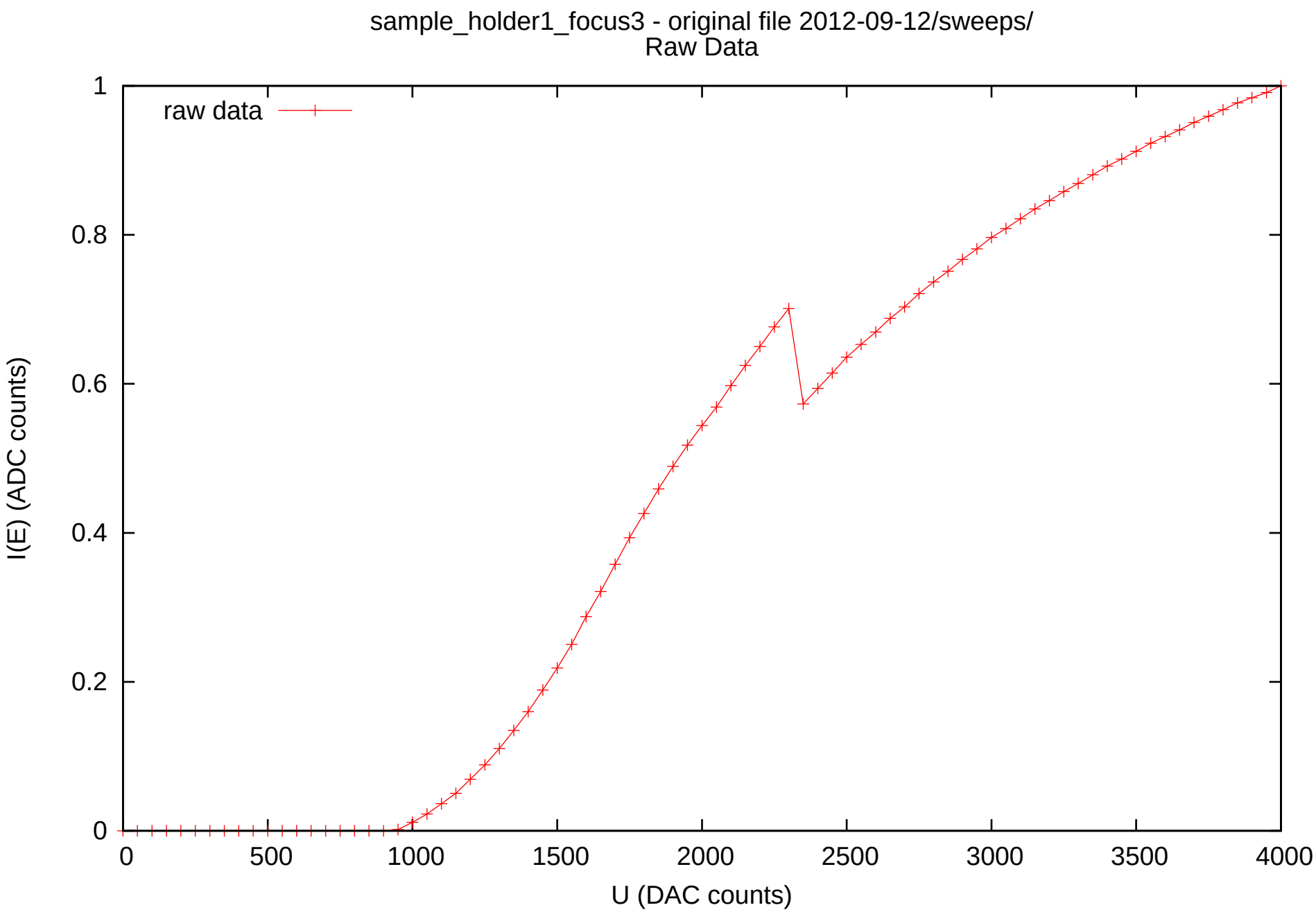
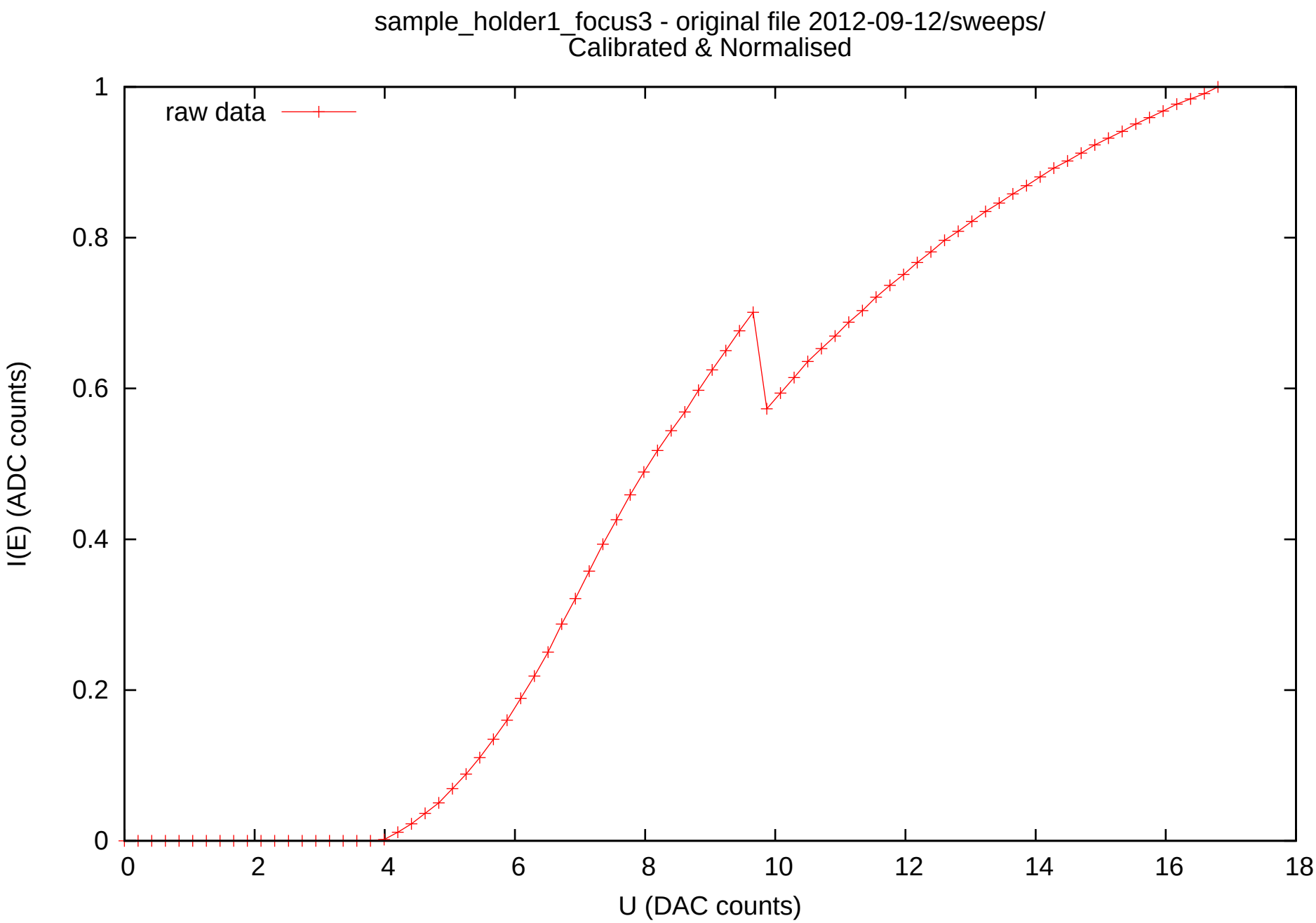
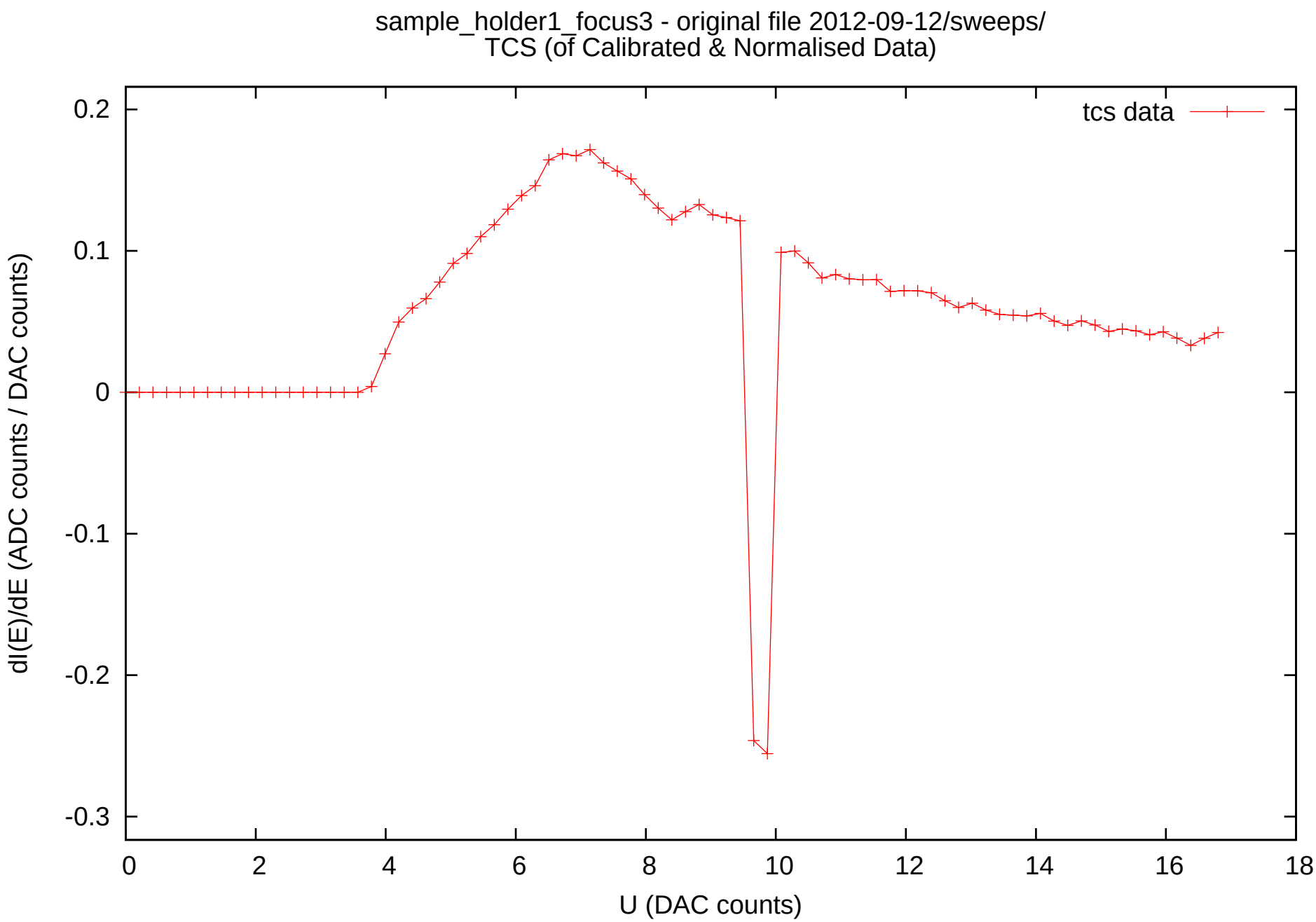
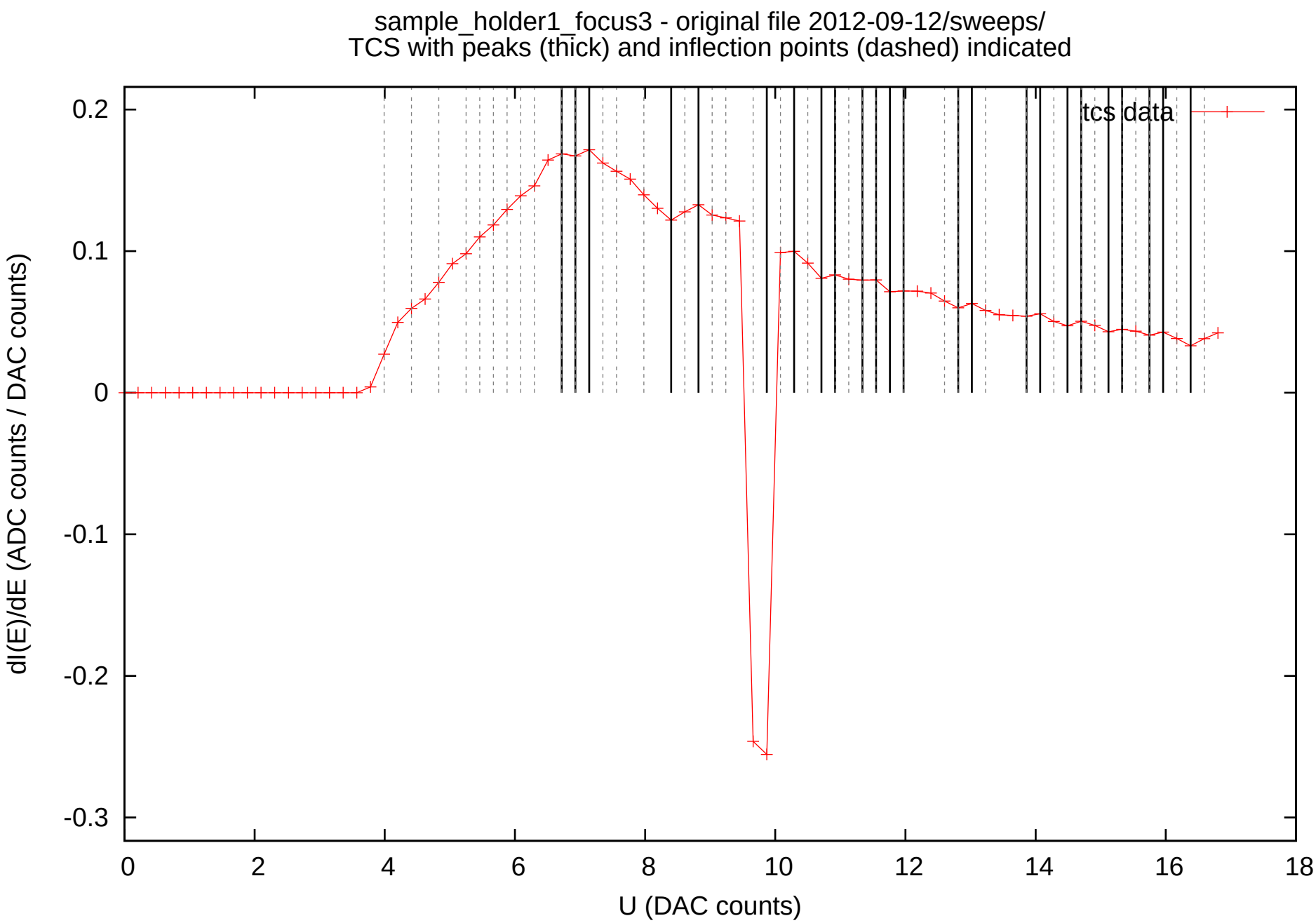
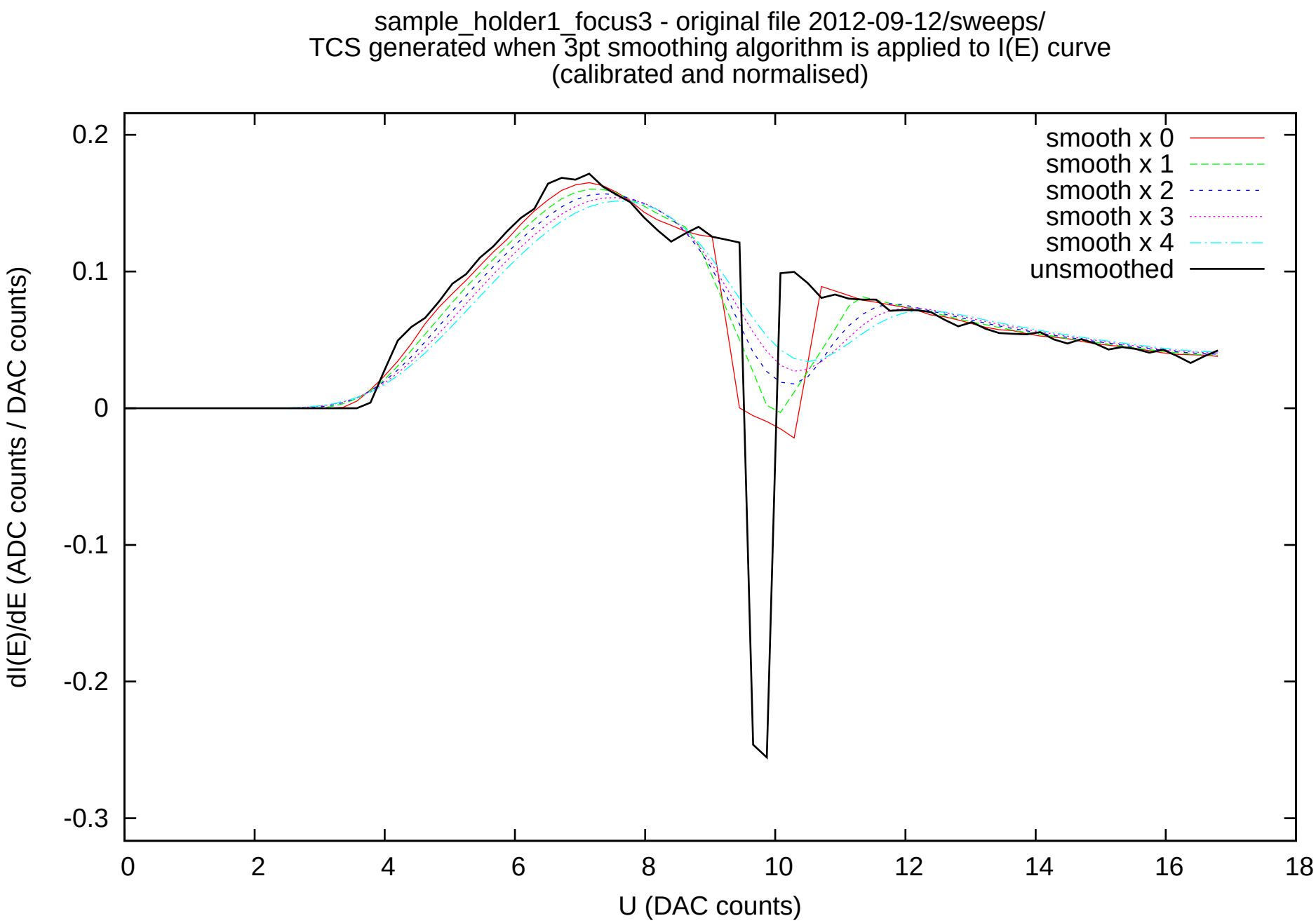
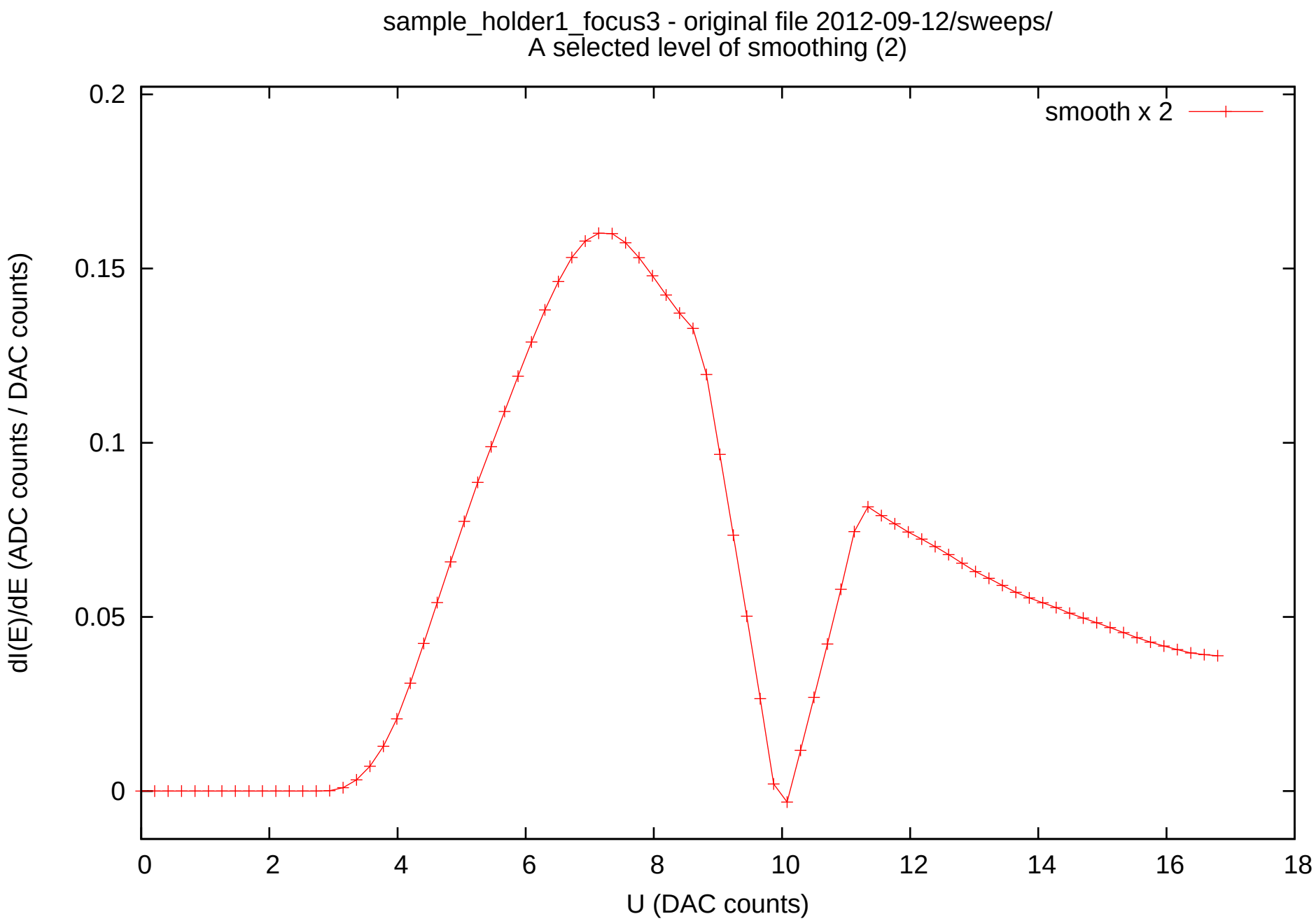

sample_holder1_focus3 - original file 2012-09-12/sweeps/
Raw Data
raw data
I(E) (ADC counts)
U (DAC counts)
0
0.2
0.4
0.6
0.8
1
0
500
1000
1500
2000
2500
3000
3500
4000

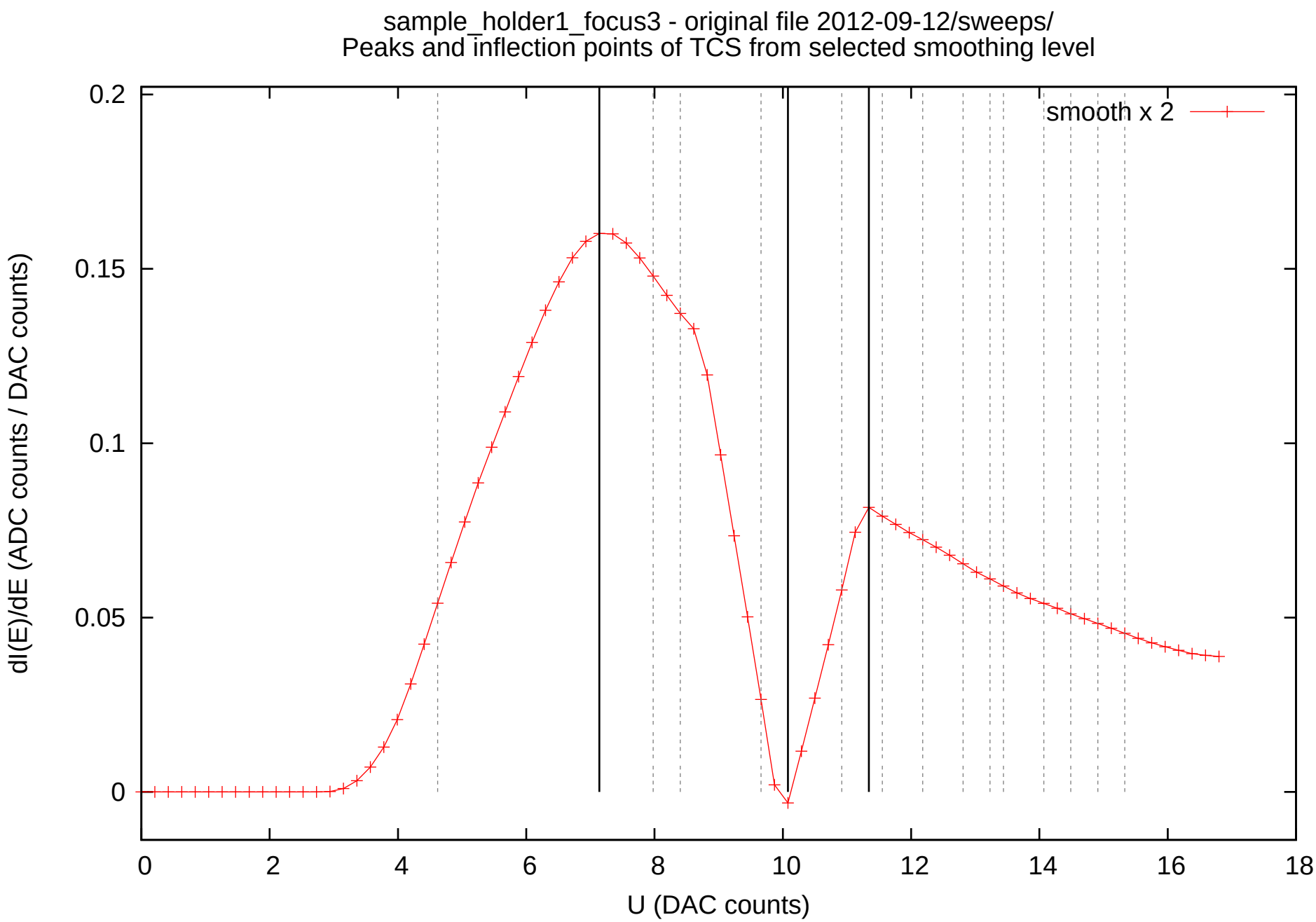

sample_holder1_focus3 - original file 2012-09-12/sweeps/
Calibrated & Normalised
raw data
I(E) (ADC counts)
U (DAC counts)
0
0.2
0.4
0.6
0.8
1
0
2
4
6
8
10
12
14
16
18

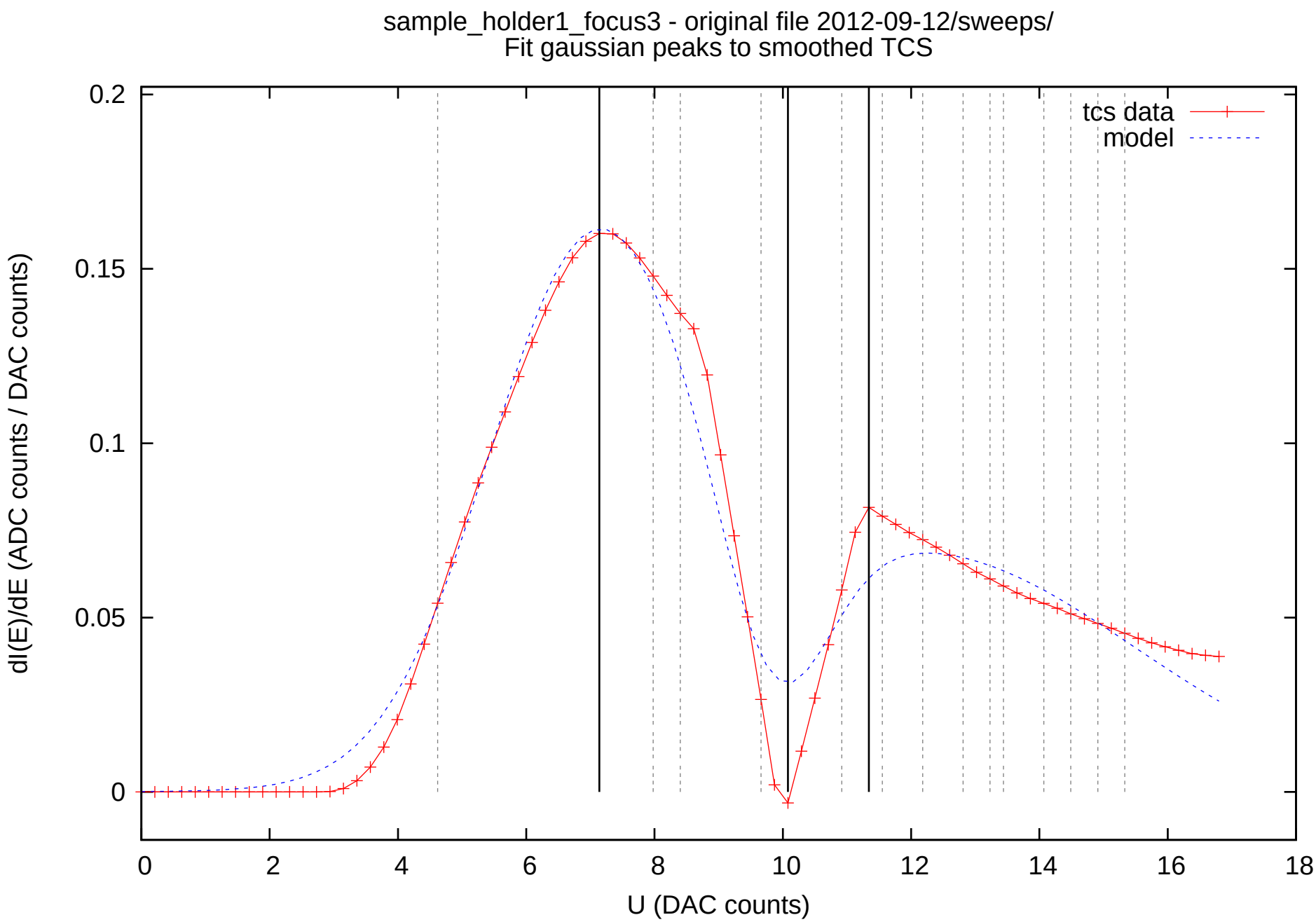

sample_holder1_focus3 - original file 2012-09-12/sweeps/
TCS (of Calibrated & Normalised Data)
tcs data
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.2
0.1
0
-0.1
-0.2
-0.3
0
2
4
6
8
10
12
14
16
18

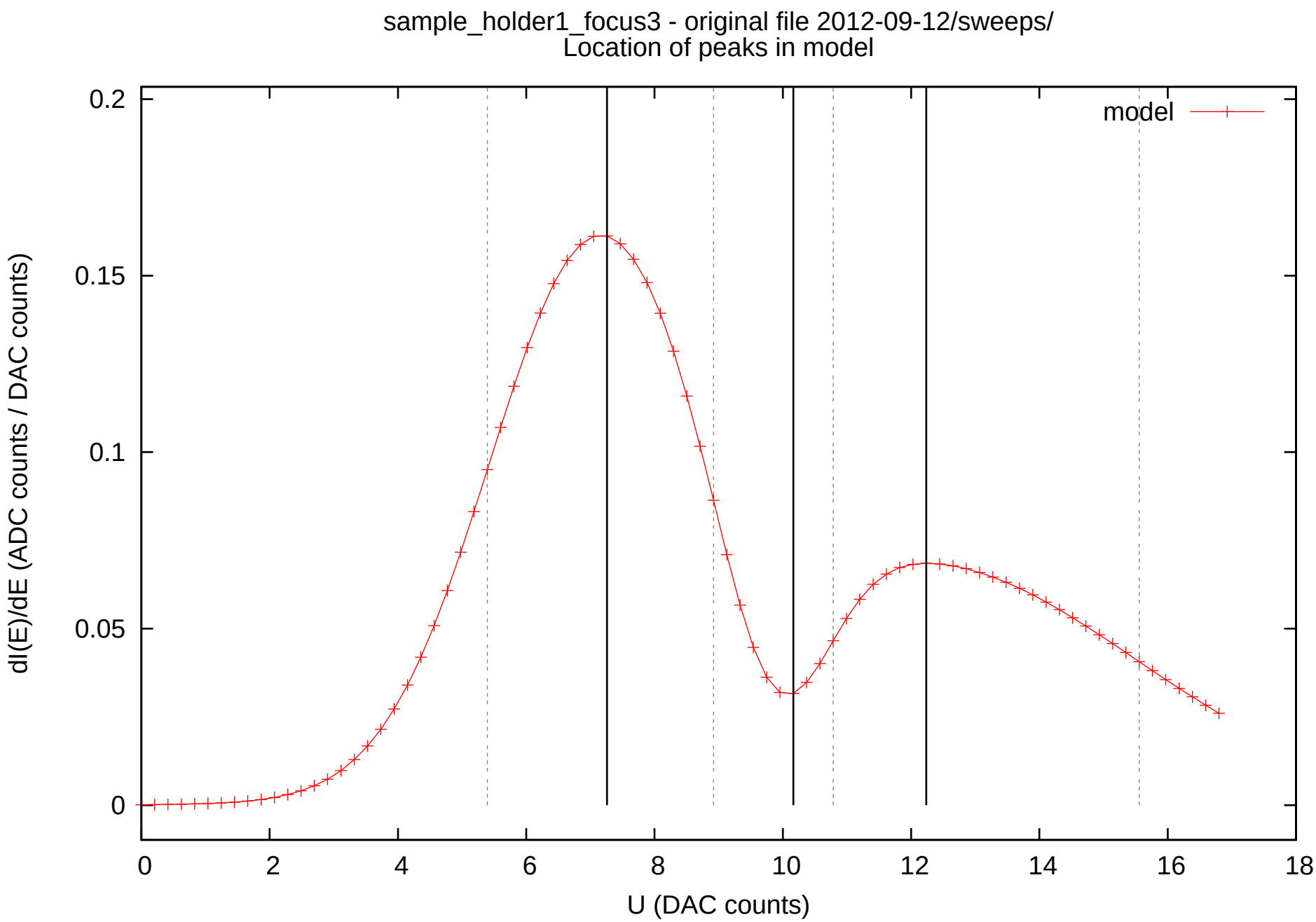

sample_holder1_focus3 - original file 2012-09-12/sweeps/
TCS with peaks (thick) and inflection points (dashed) indicated
tcs data
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.2
0.1
0
-0.1
-0.2
-0.3
0
2
4
6
8
10
12
14
16
18

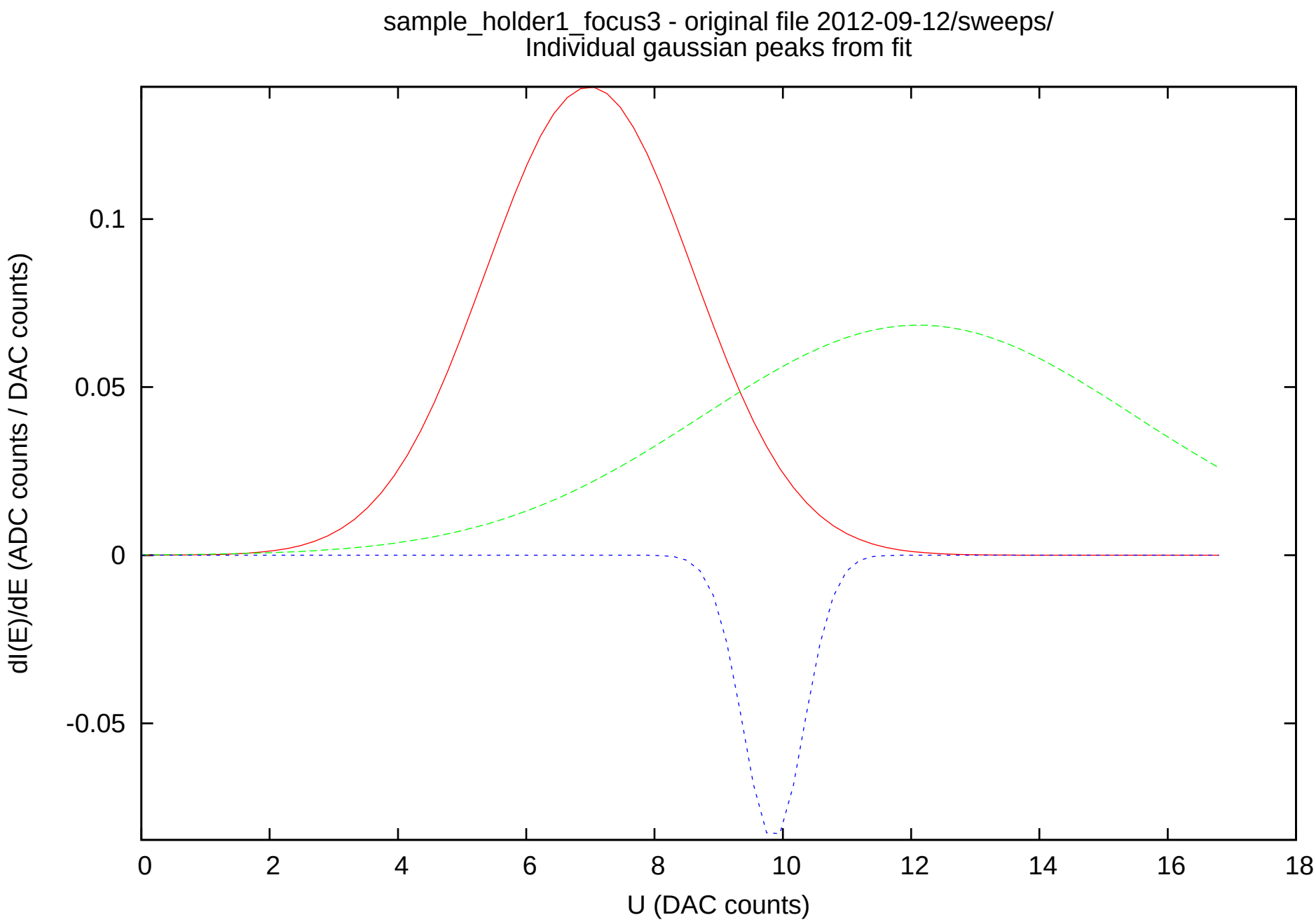

sample_holder1_focus3 - original file 2012-09-12/sweeps/
TCS generated when 3pt smoothing algorithm is applied to I(E) curve
(calibrated and normalised)
smooth x 0
smooth x 1
smooth x 2
smooth x 3
smooth x 4
unsmoothed
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.2
0.1
0
-0.1
-0.2
-0.3
0
2
4
6
8
10
12
14
16
18

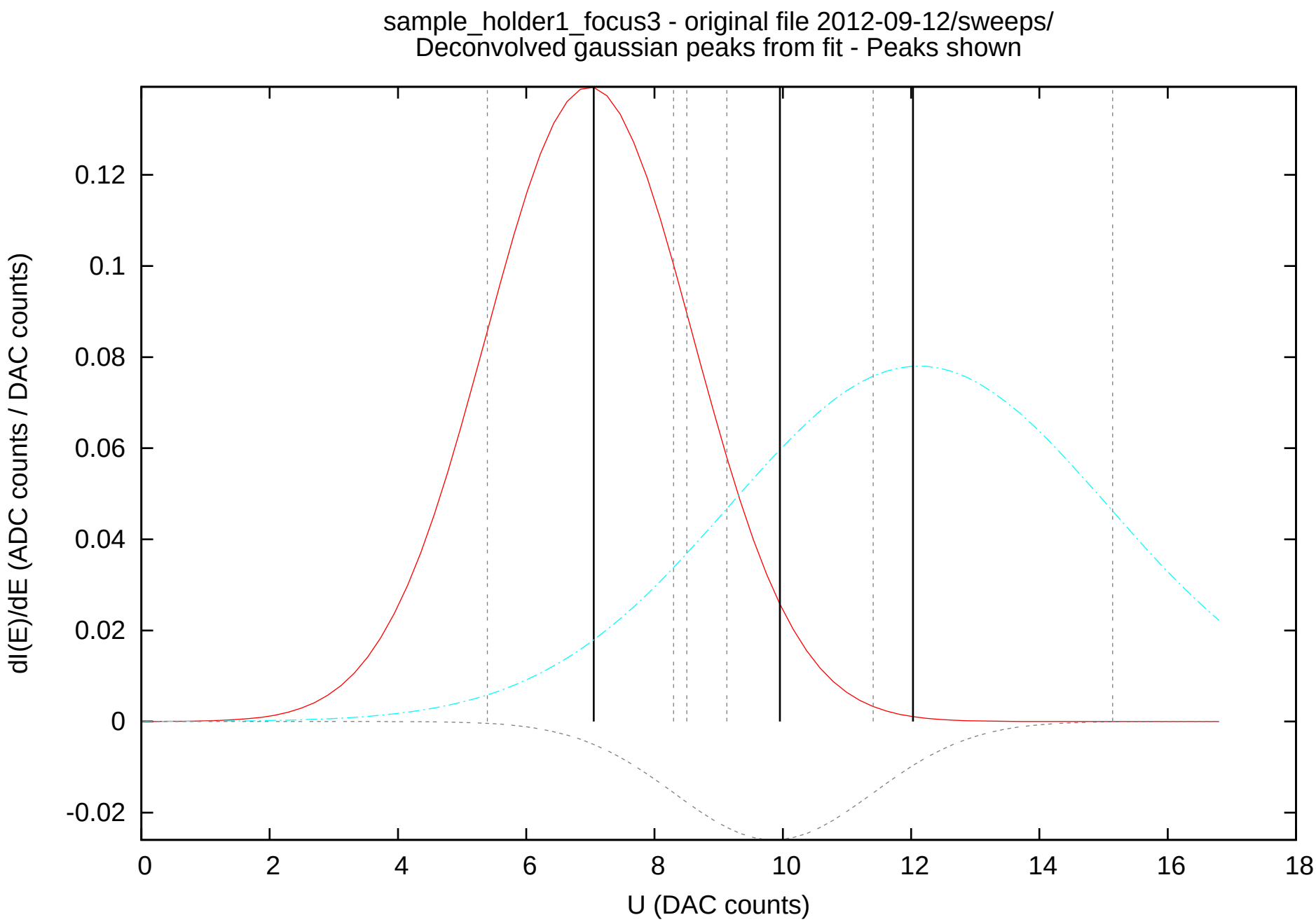

sample_holder1_focus3 - original file 2012-09-12/sweeps/
A selected level of smoothing (2)
smooth x 2
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.2
0.15
0.1
0.05
0
0
2
4
6
8
10
12
14
16
18

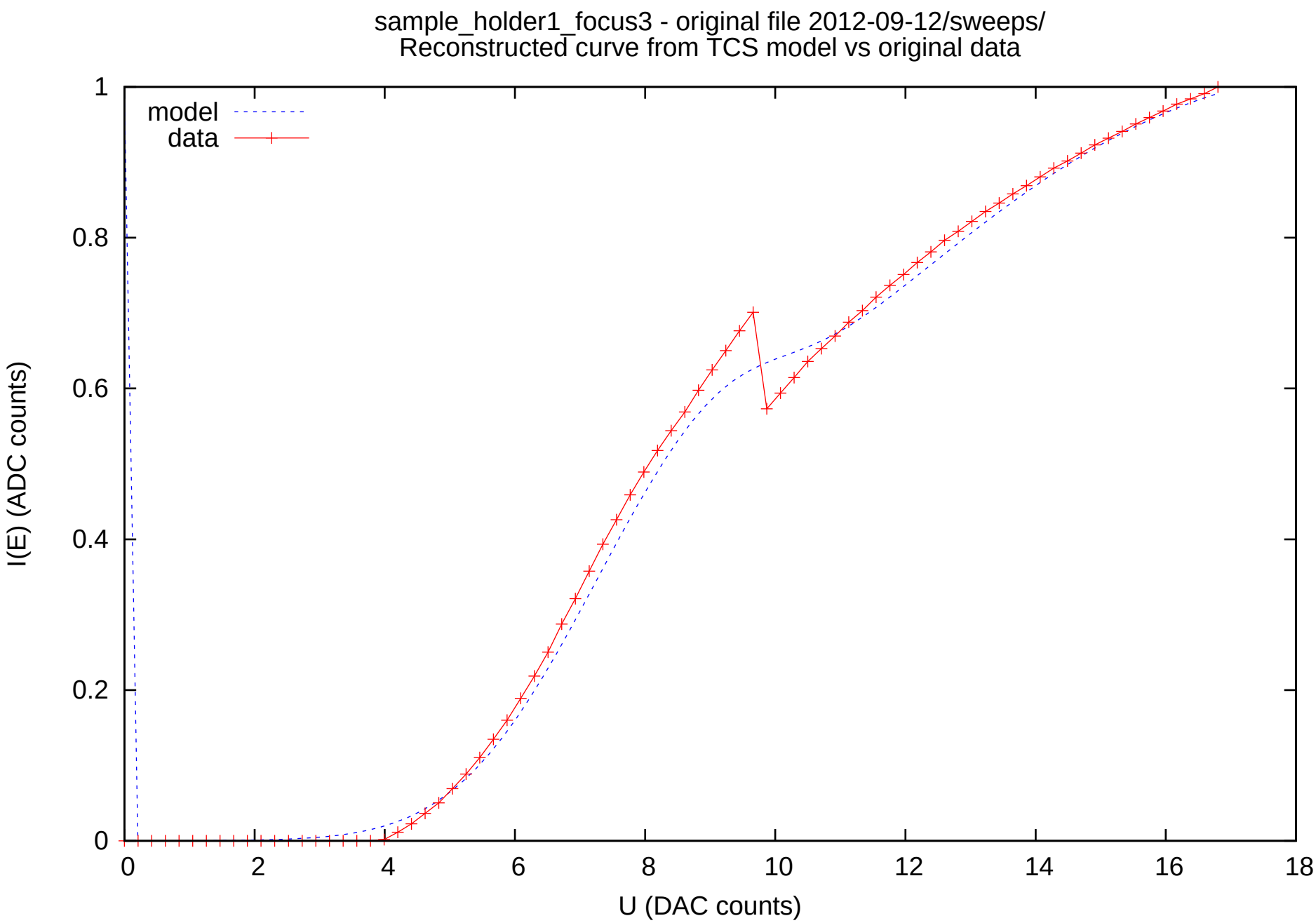

sample_holder1_focus3 - original file 2012-09-12/sweeps/
Peaks and inflection points of TCS from selected smoothing level
smooth x 2
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.2
0.15
0.1
0.05
0
0
2
4
6
8
10
12
14
16
18


sample_holder1_focus3 - original file 2012-09-12/sweeps/
Fit gaussian peaks to smoothed TCS
tcs data
model
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0.2
0.15
0.1
0.05
0
0
2
4
6
8
10
12
14
16
18


sample_holder1_focus3 - original file 2012-09-12/sweeps/
Location of peaks in model
model
dI(E)/dE (ADC counts / DAC counts)
U (DAC counts)
0
0.05
0.1
0.15
0.2
0
2
4
6
8
10
12
14
16
18


sample_holder1_focus3 - original file 2012-09-12/sweeps/
Individual gaussian peaks from fit
dI(E)/dE (ADC counts / DAC counts)
0.1
0.05
0
-0.05
0
2
4
6
8
10
12
14
16
18
U (DAC counts)


sample_holder1_focus3 - original file 2012-09-12/sweeps/
Deconvolved gaussian peaks from fit - Peaks shown
dI(E)/dE (ADC counts / DAC counts)
0.12
0.1
0.08
0.06
0.04
0.02
0
-0.02
0
2
4
6
8
10
12
14
16
18
U (DAC counts)


sample_holder1_focus3 - original file 2012-09-12/sweeps/
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