

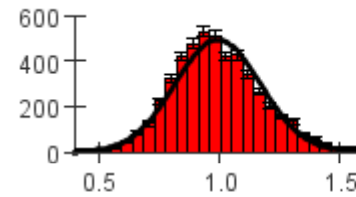
EM Calorimeter Resolution

N. Graf

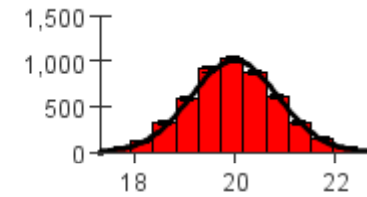
080806

- Single photons at 90°
- Energies:
 - 1,2,5,10,20,50,100GeV
- Sampling Fractions from Least Squares fit, minimizing linearity.

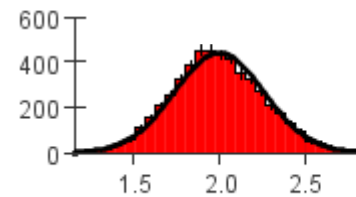
corrected cluster energy for hig...



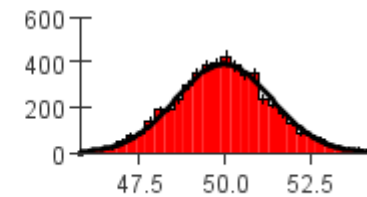
corrected cluster energy for hig...



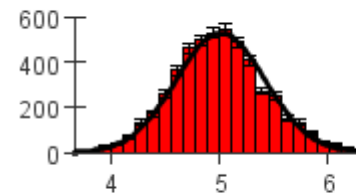
corrected cluster energy for hig...



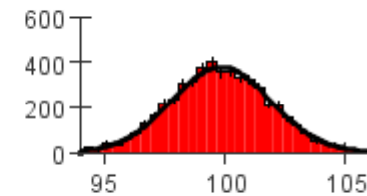
corrected cluster energy for hig...



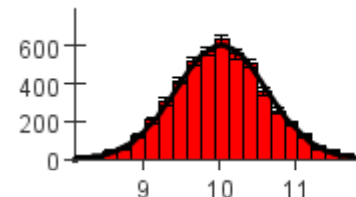
corrected cluster energy for hig...



corrected cluster energy for hig...

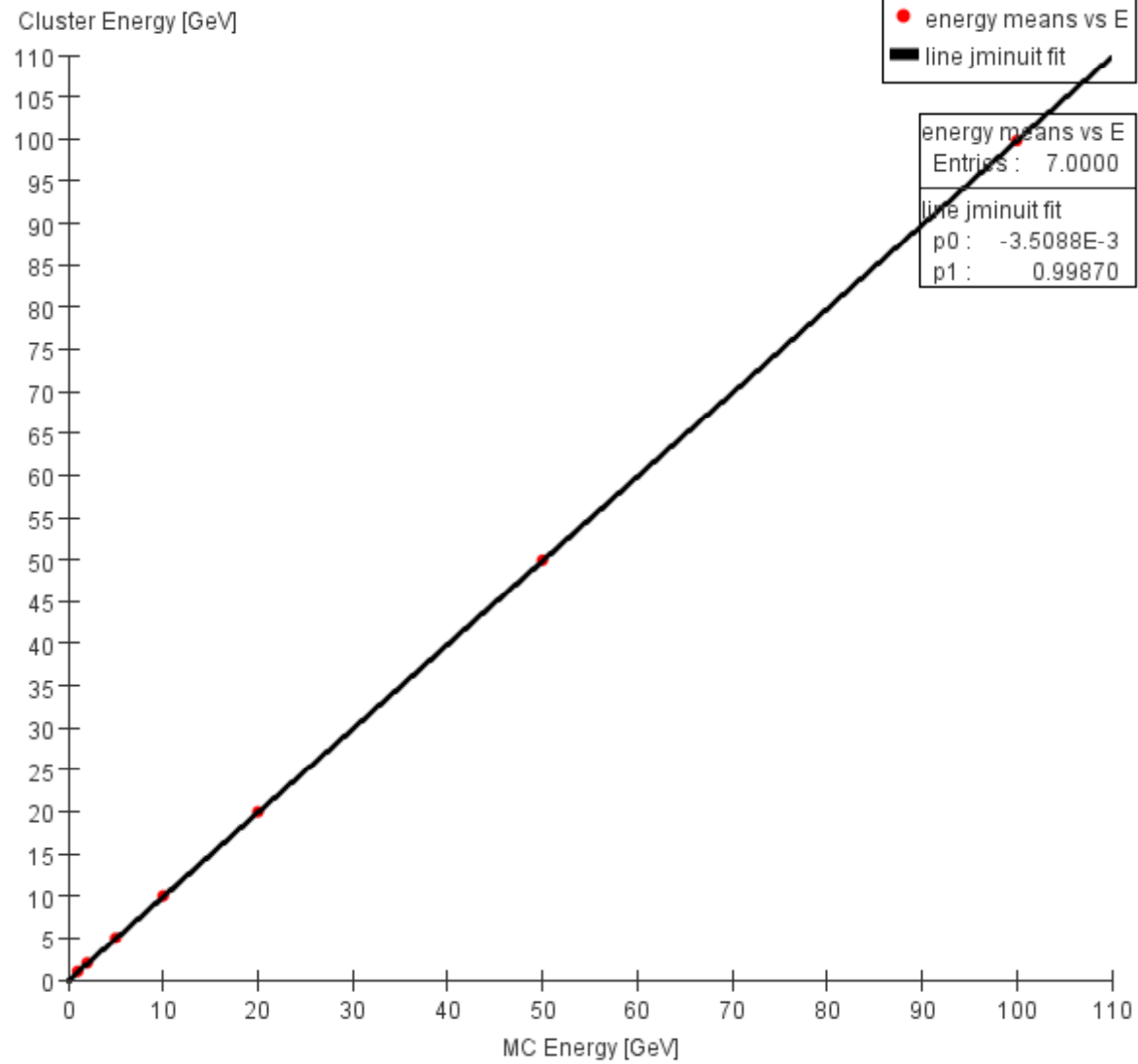


corrected cluster energy for hig...

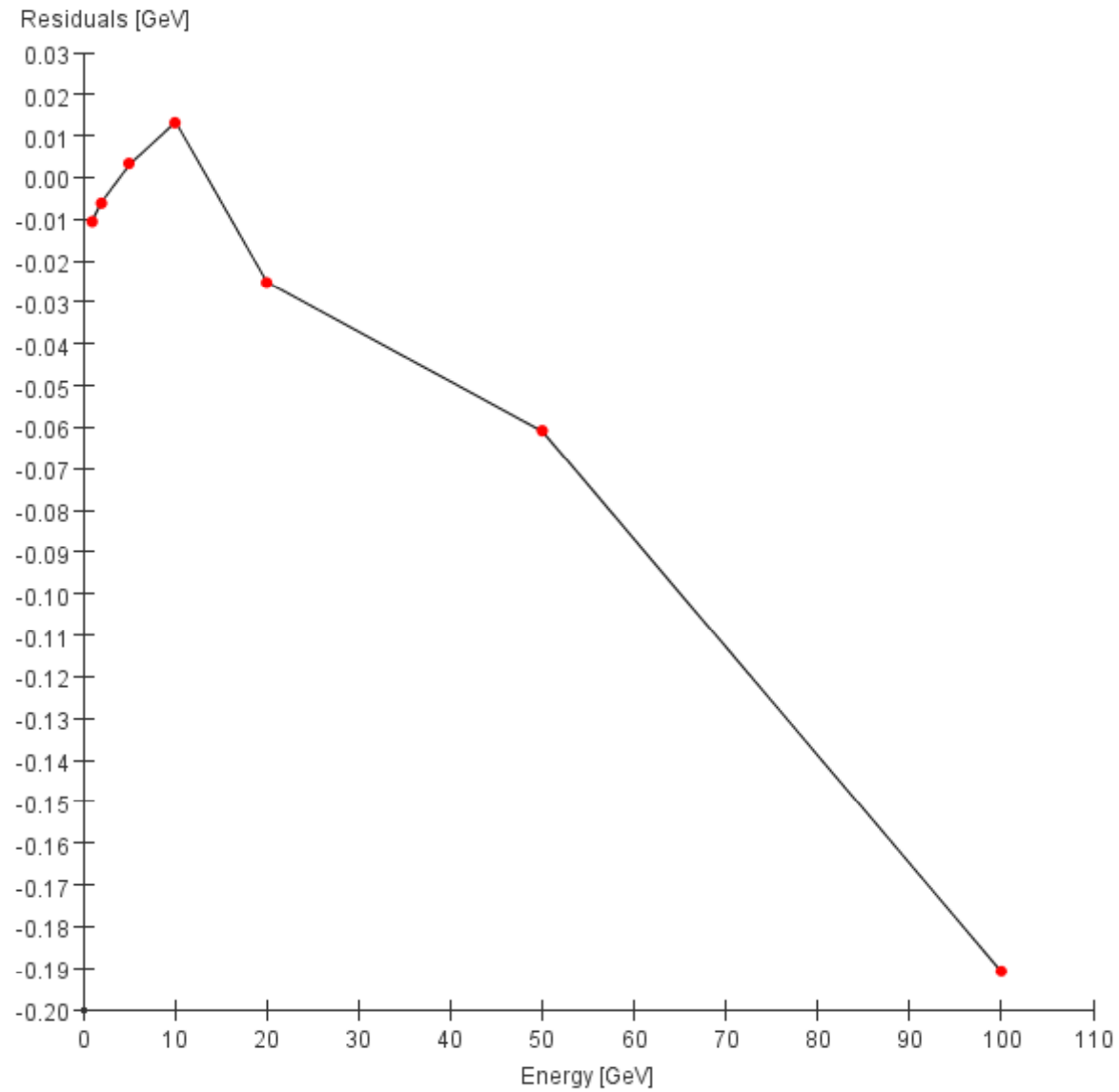


Linearity

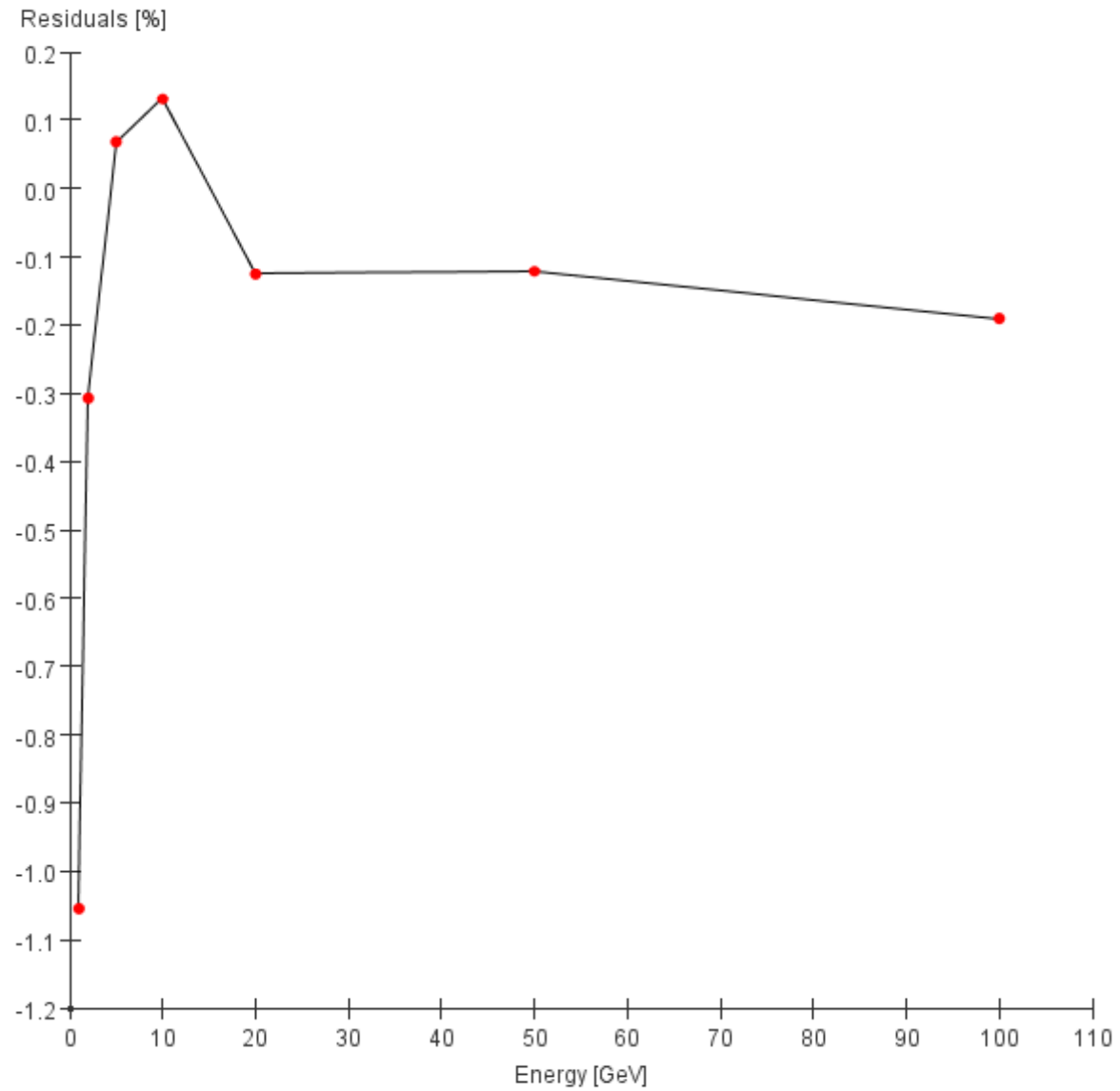
energy means vs E



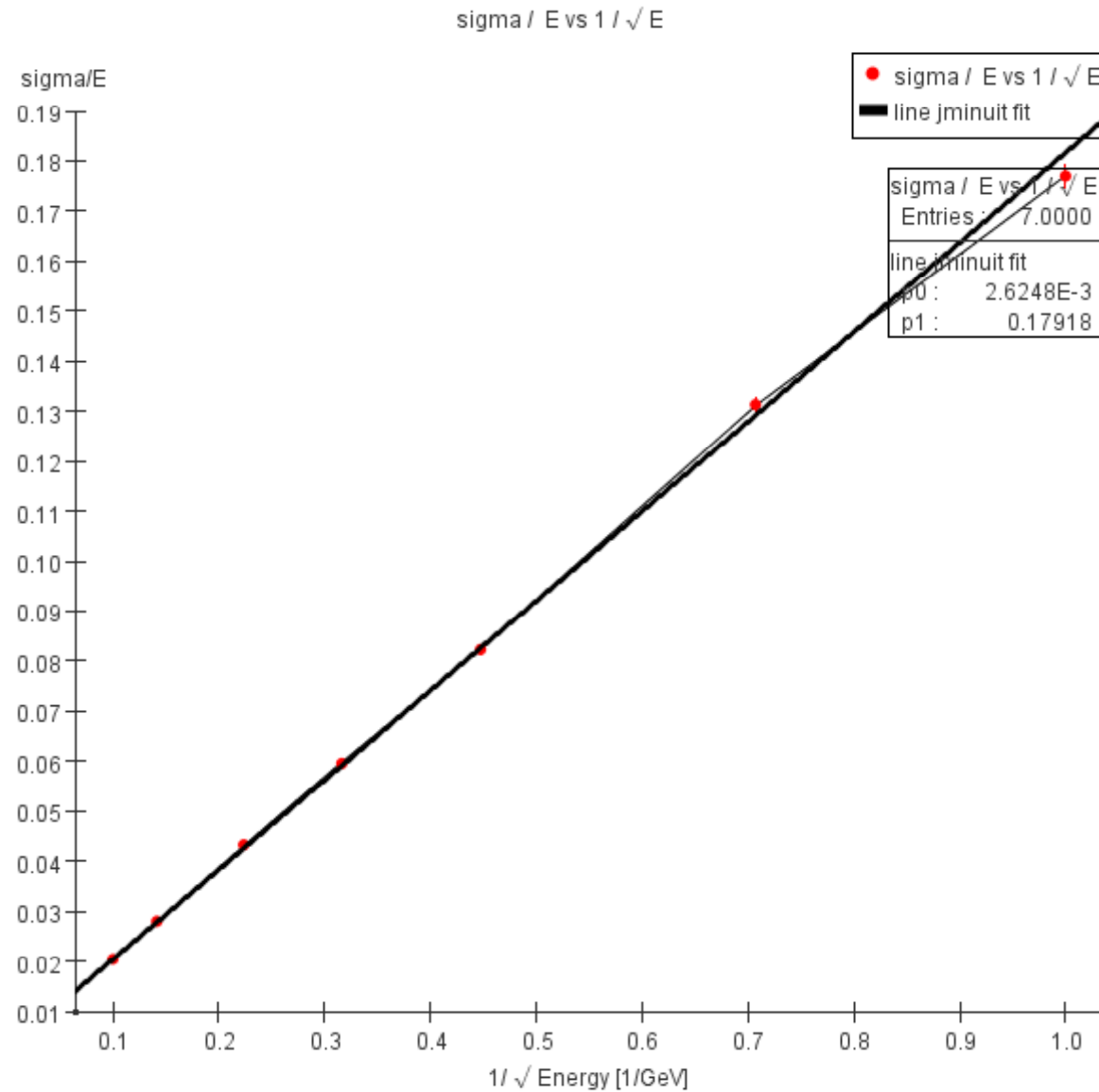
Residuals



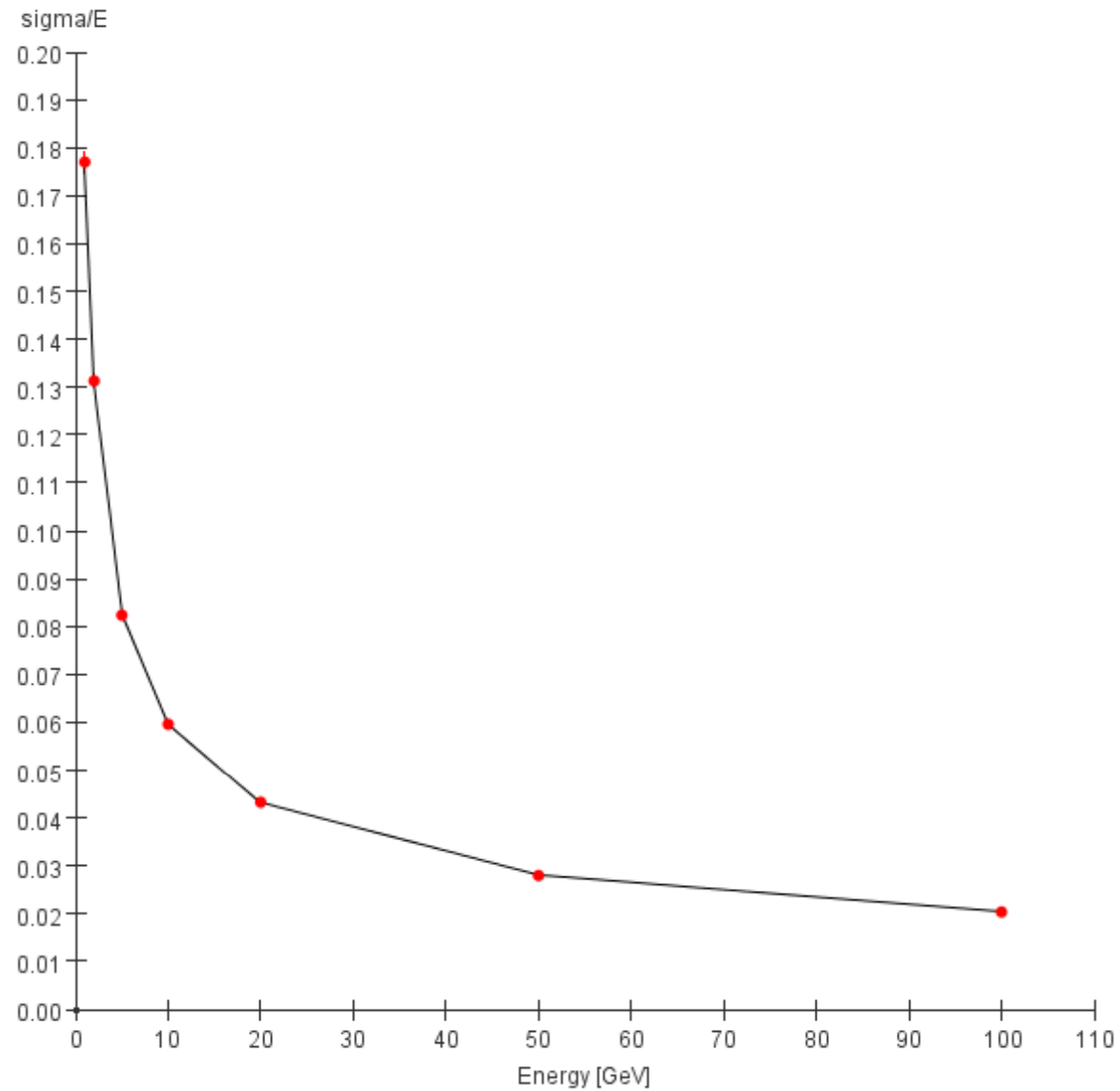
Residuals (%)



Resolution σ/E vs $1/\sqrt{E}$



Energy Resolution σ/E vs E



Photons Theta=90

- Energy Linearity Fit:
 - p0 : -0.0035088 +/- 0.0021444
 - p1 : 0.99869721 +/- 2.2501702E-4

- Energy Resolution Fit:
 - p0 : 0.00262475 +/- 2.5810811E-4
 - p1 : 0.17918499 +/- 0.0013048

Energy 1.0

amplitude: 491.04339209451445 +/- 9.21466204814647
mean: 0.9894548788372569 +/- 0.0027495838343568613
sigma: 0.17698675919009588 +/- 0.0021303741429413757

Energy 2.0

amplitude: 437.15832811069066 +/- 7.716783172659116
mean: 1.9938617842335138 +/- 0.0037660358983847924
sigma: 0.262658785796426 +/- 0.0027339200715491676

Energy 5.0

amplitude: 527.7580436810331 +/- 9.460855847545904
mean: 5.003395273702026 +/- 0.0060477584623447765
sigma: 0.41134901708549026 +/- 0.00447363243773532

Energy 10.0

amplitude: 600.906517949098 +/- 10.600608518360154
mean: 10.013094242003453 +/- 0.008475399712122465
sigma: 0.5959987269300386 +/- 0.006250750564525737

Energy 20.0

amplitude: 1003.0235885982896 +/- 17.565569237478808
mean: 19.974807136281935 +/- 0.012332083491844082
sigma: 0.864812438339352 +/- 0.008995298582370519

Energy 50.0

amplitude: 388.67159040996506 +/- 6.967940905413214
mean: 49.93922608994288 +/- 0.020168824522130206
sigma: 1.399434262703303 +/- 0.015442825500760732

Energy 100.0

amplitude: 378.0517190125402 +/- 6.61328614770722
mean: 99.80922002121854 +/- 0.029078117566782614
sigma: 2.040576817857004 +/- 0.020878144734514114