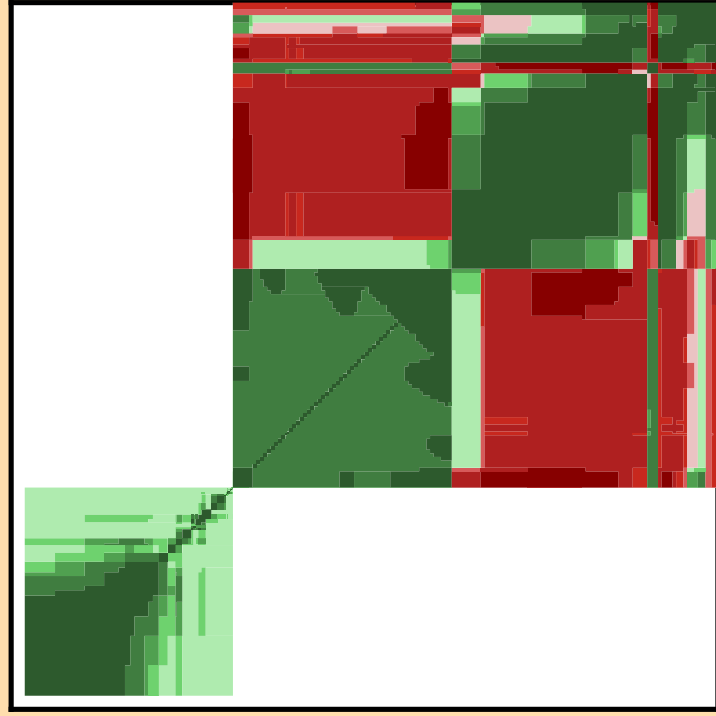
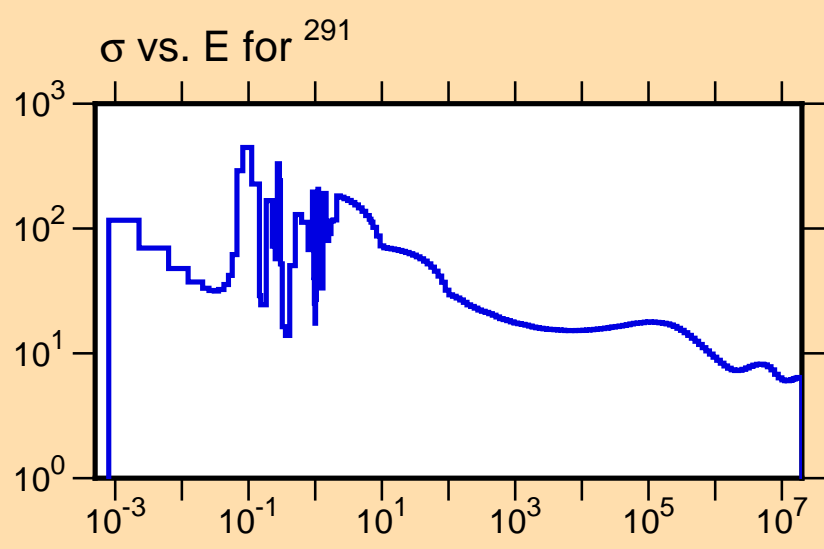


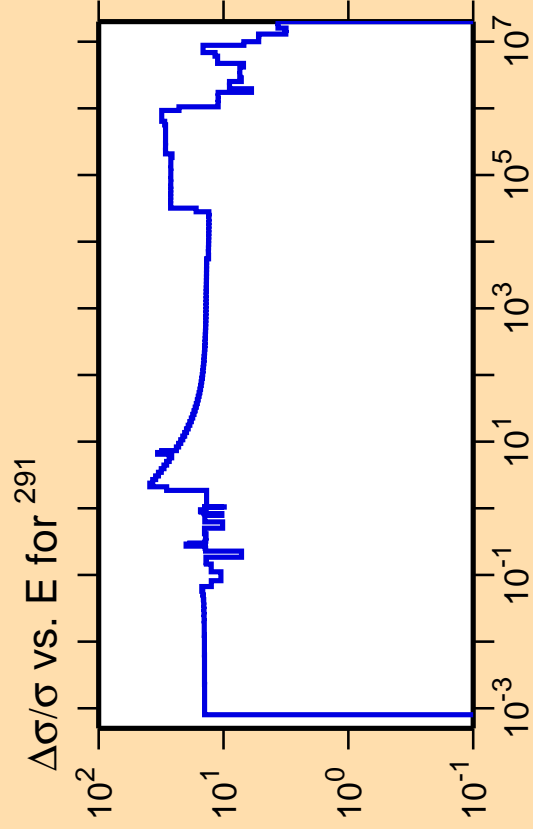
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).



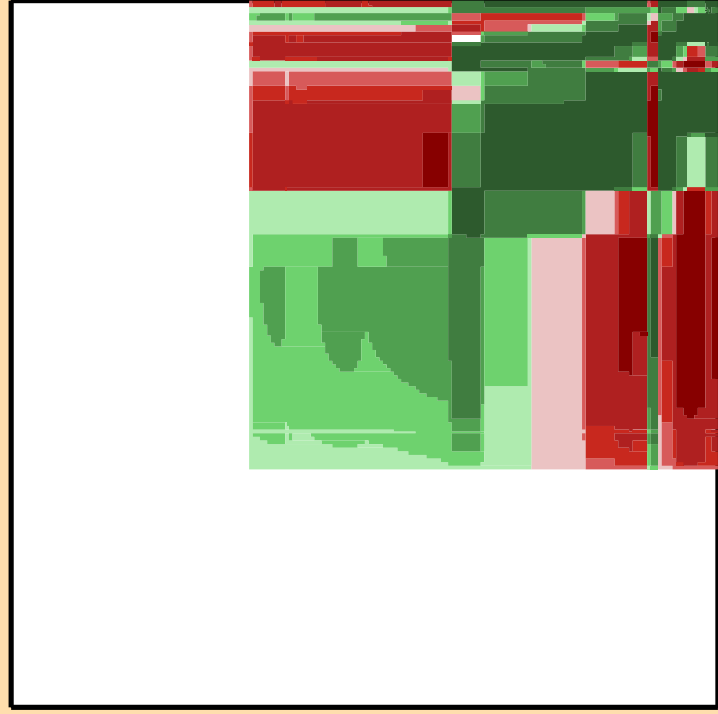
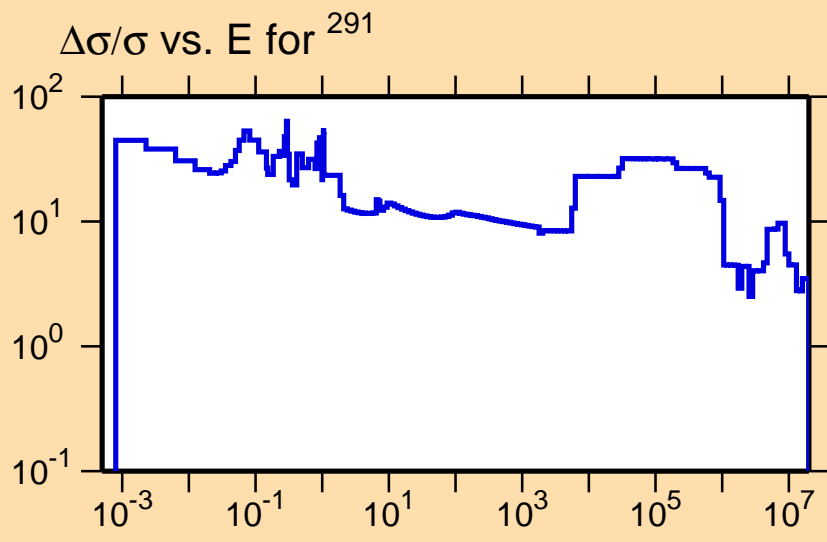
Correlation Matrix





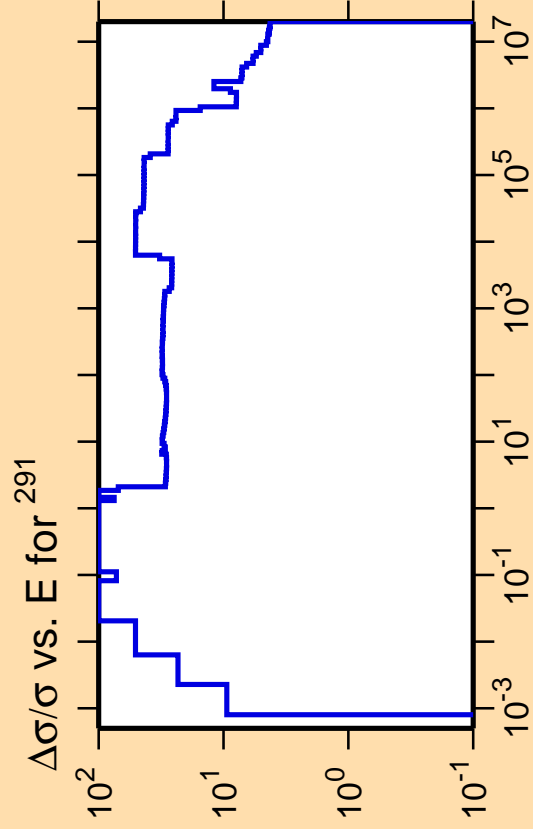
Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).



Correlation Matrix



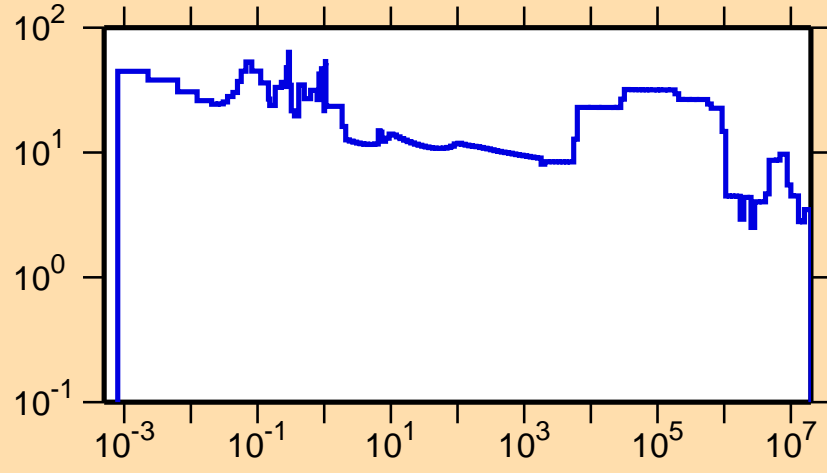


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

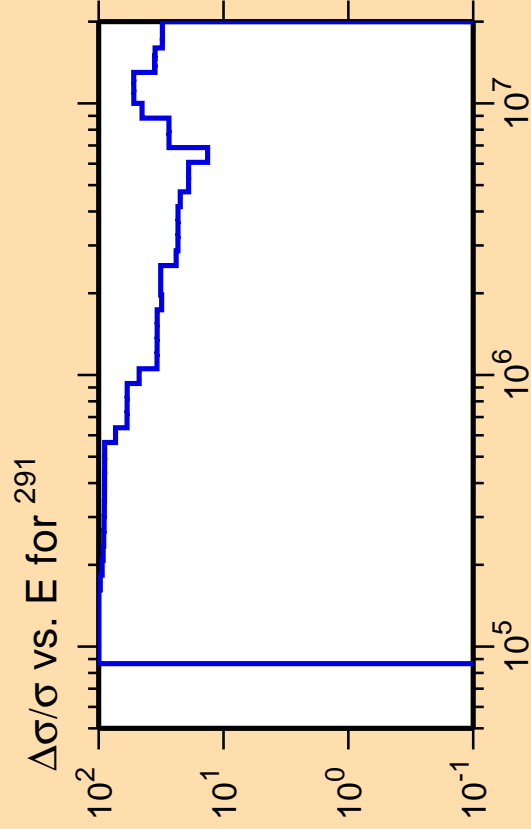
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix

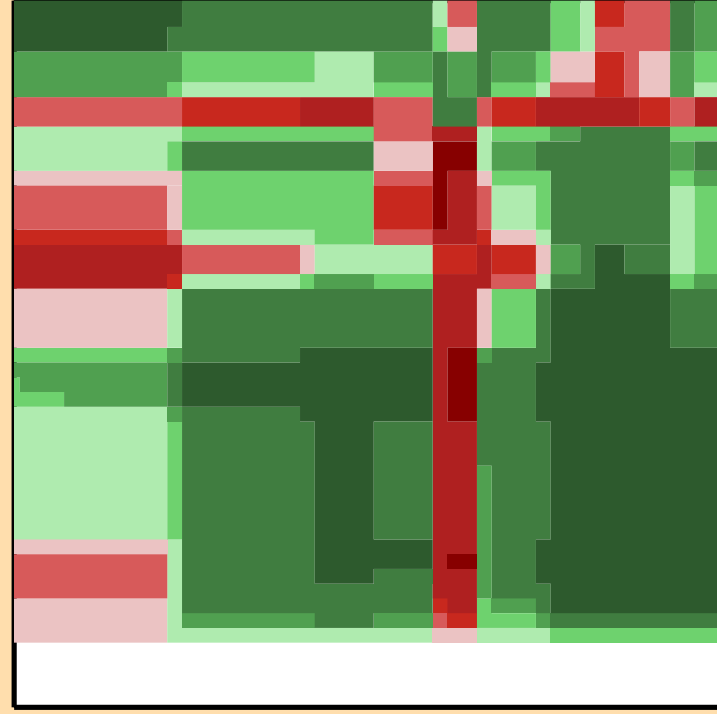
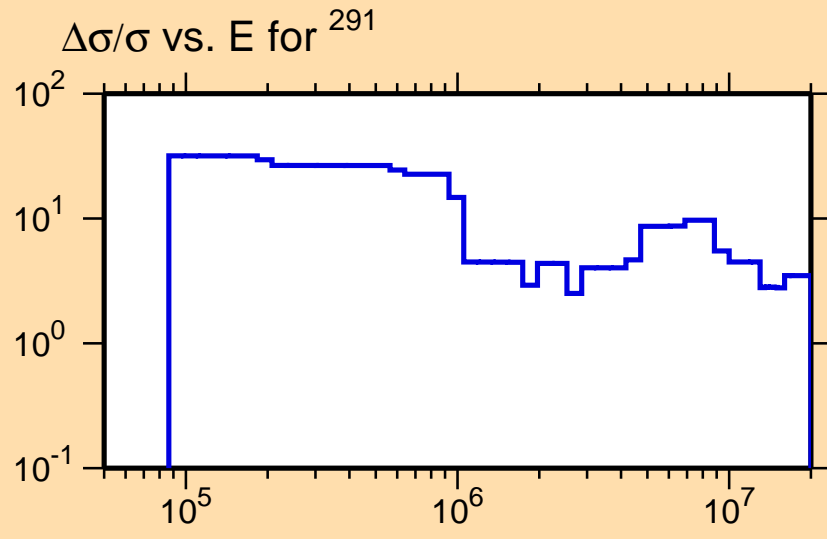




Ordinate scale is %  
relative standard deviation.

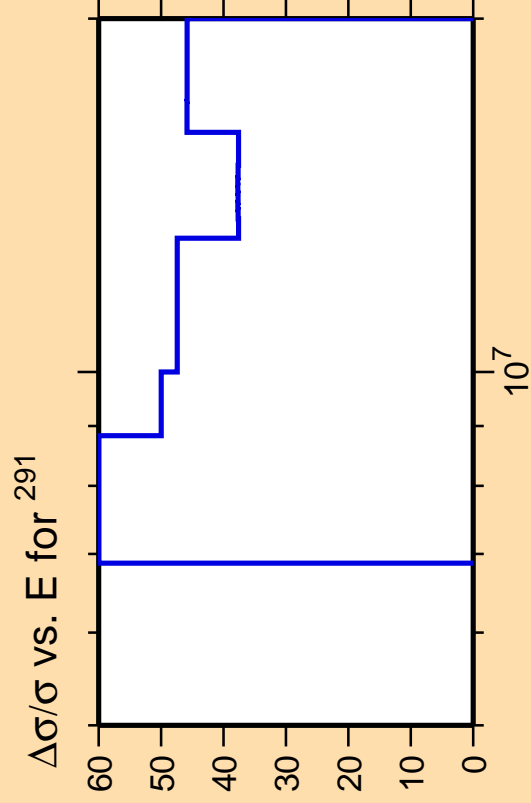
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

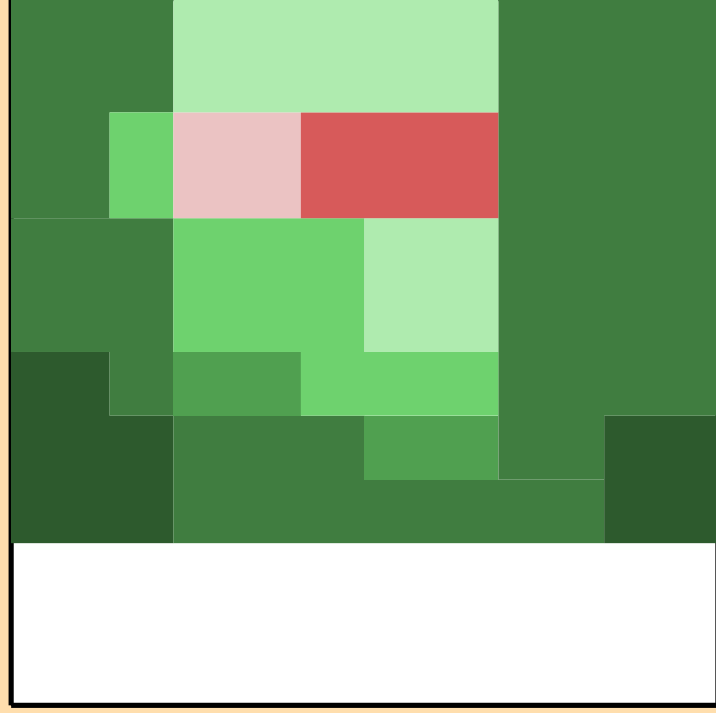
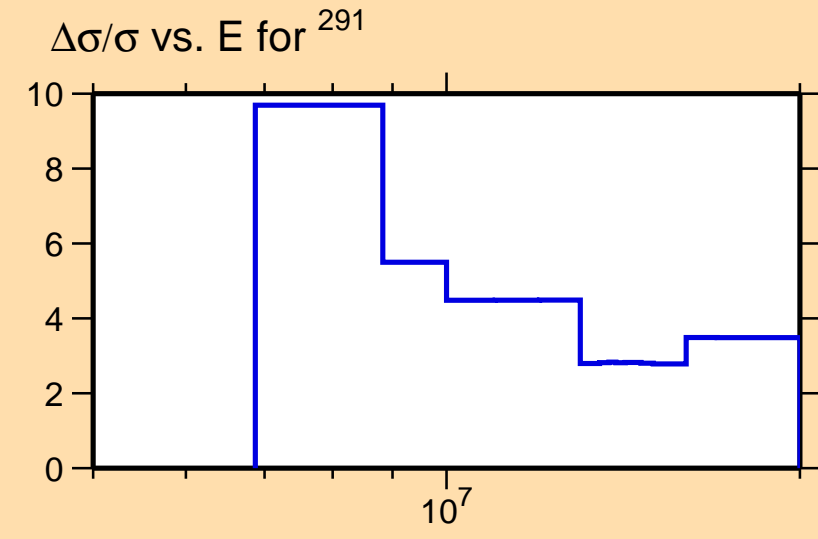




Ordinate scale is %  
relative standard deviation.

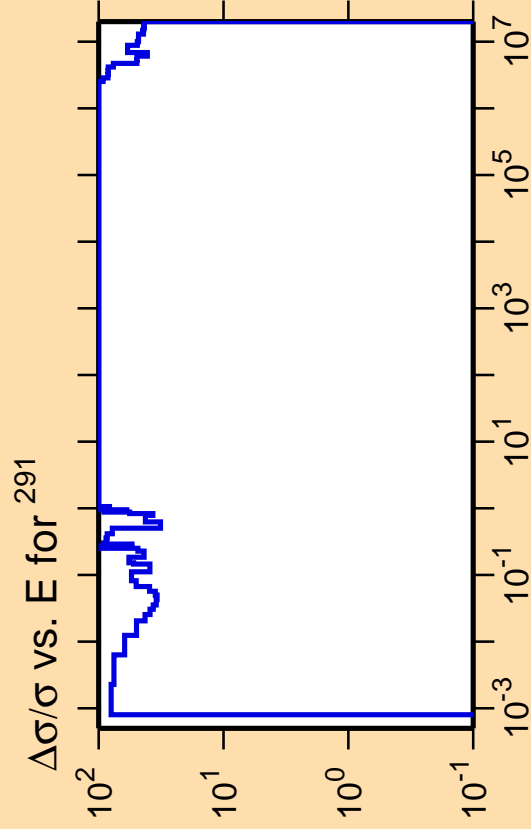
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

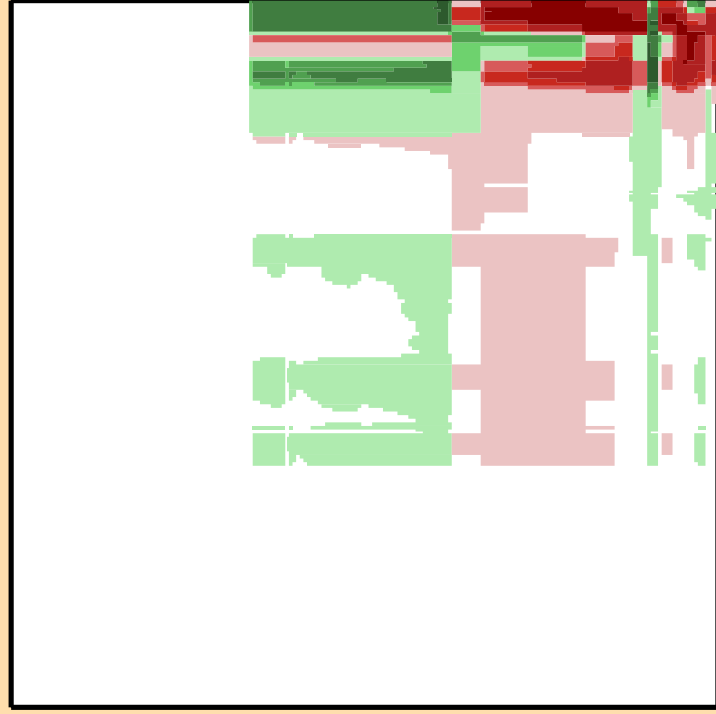
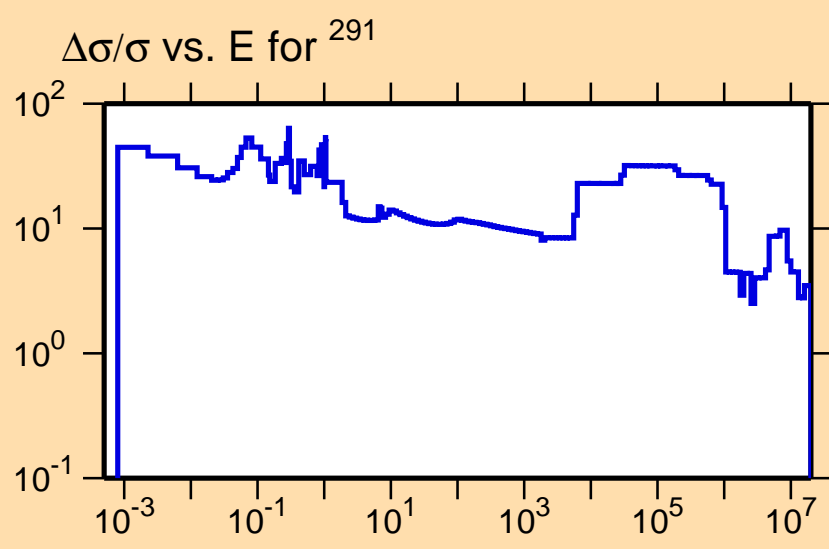




Ordinate scale is %  
relative standard deviation.

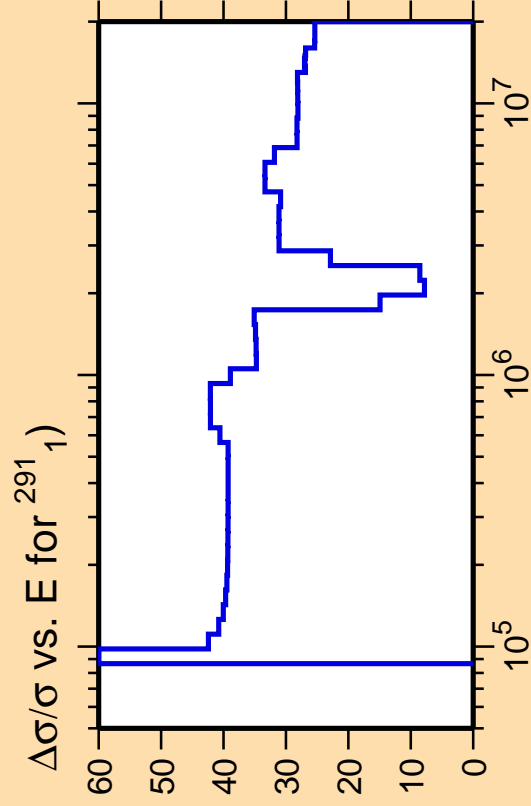
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



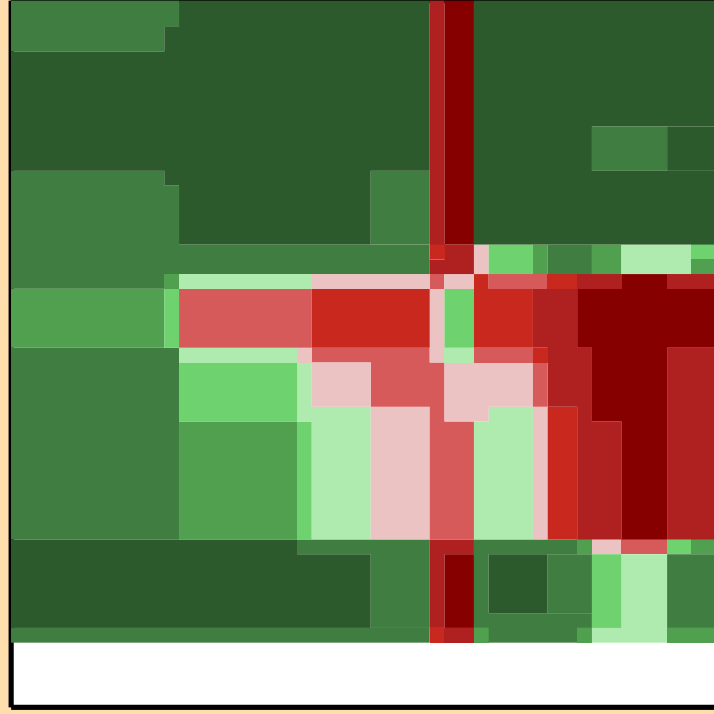
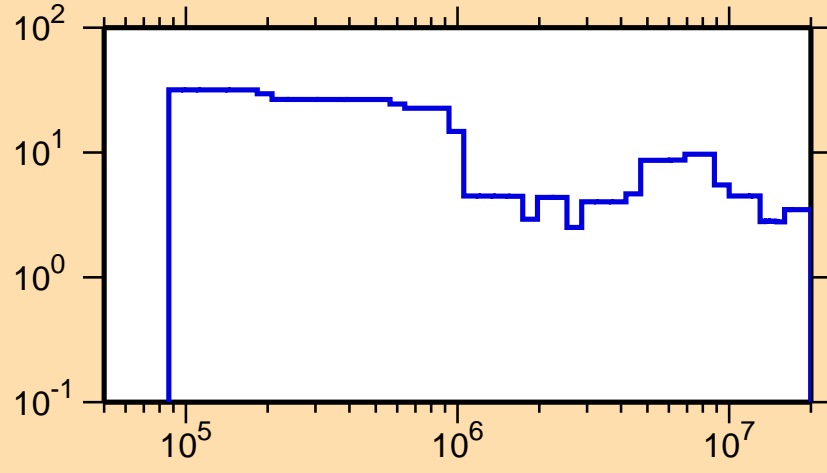


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

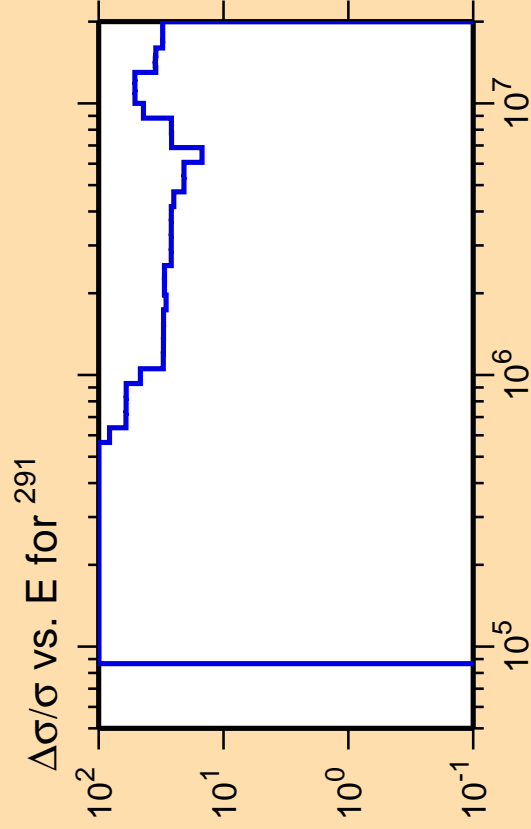
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix

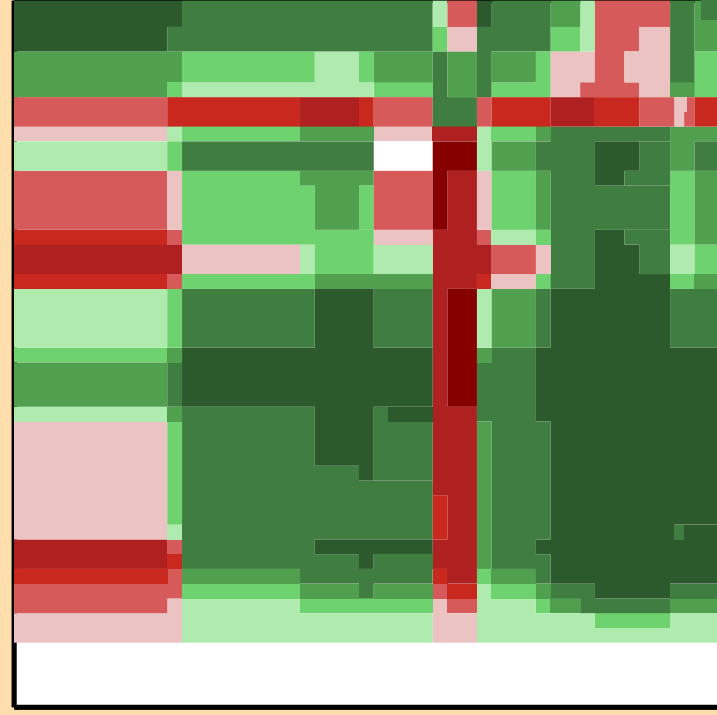
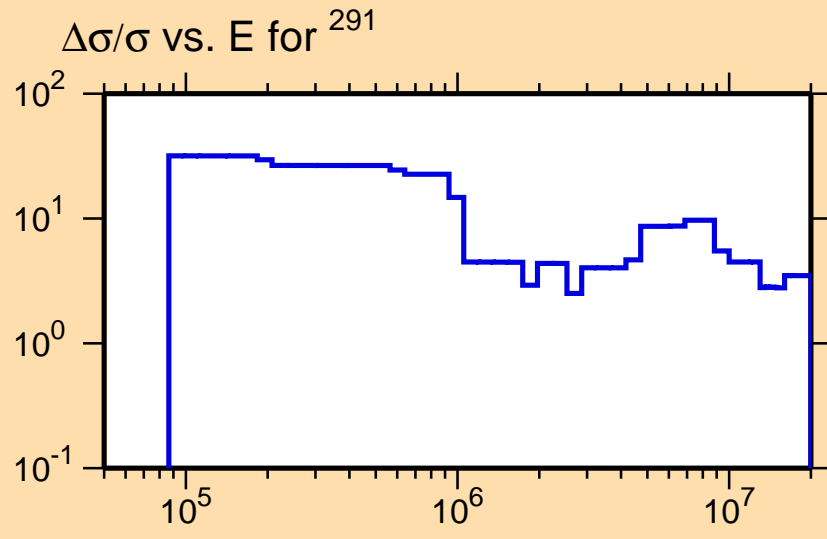




Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

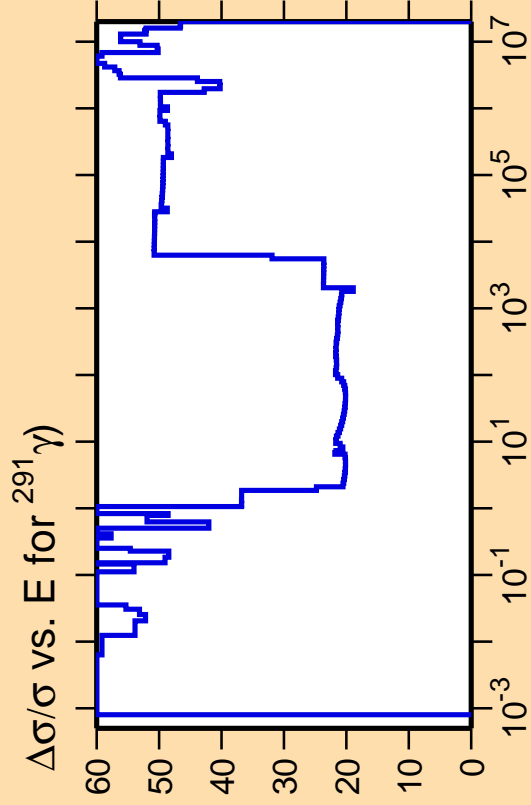
Warning: some uncertainty  
data were suppressed.



Correlation Matrix





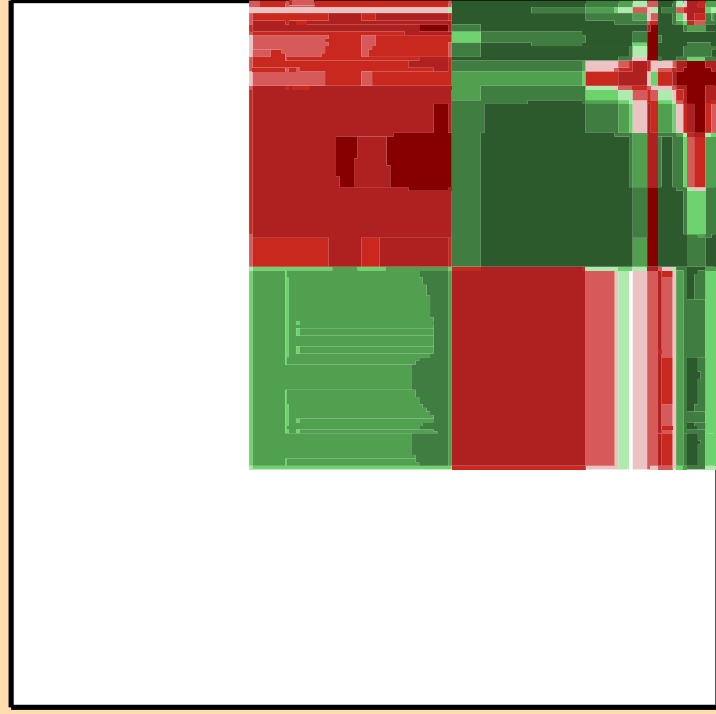
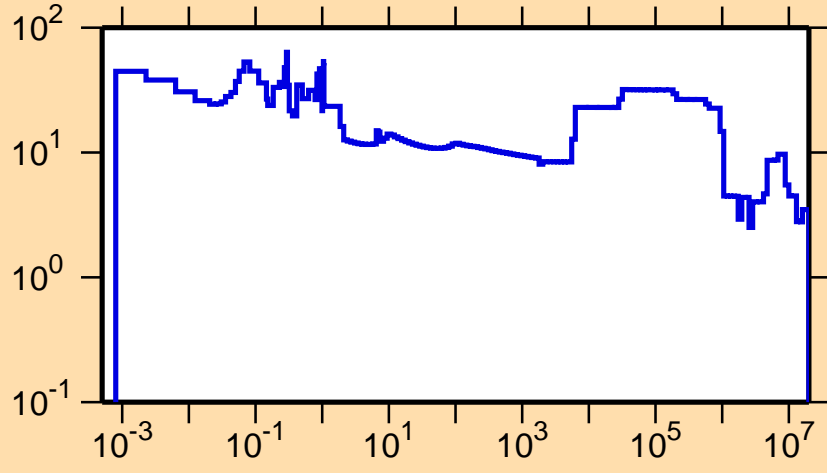


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

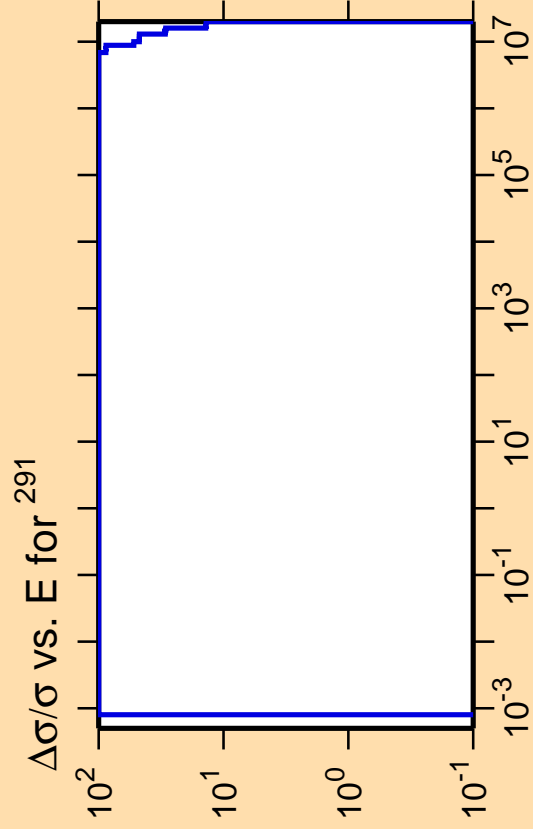
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



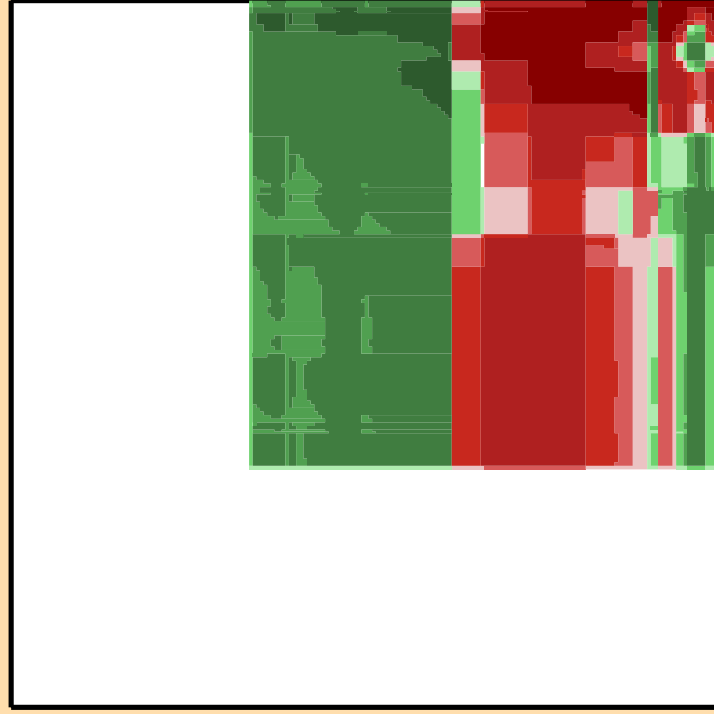
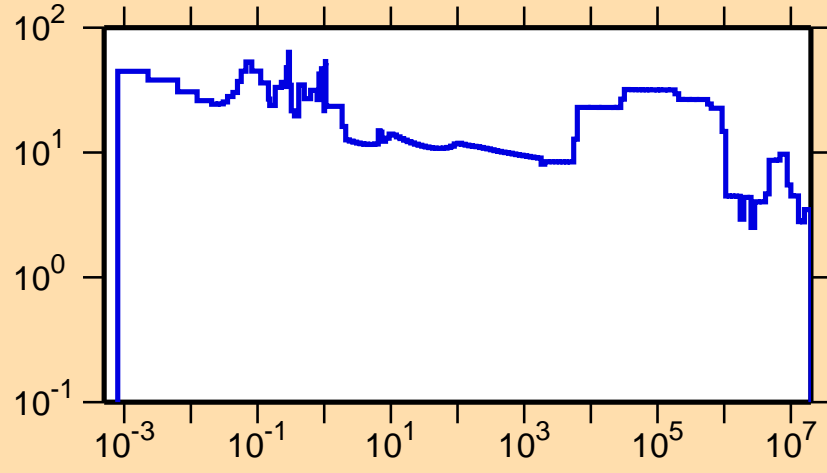


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

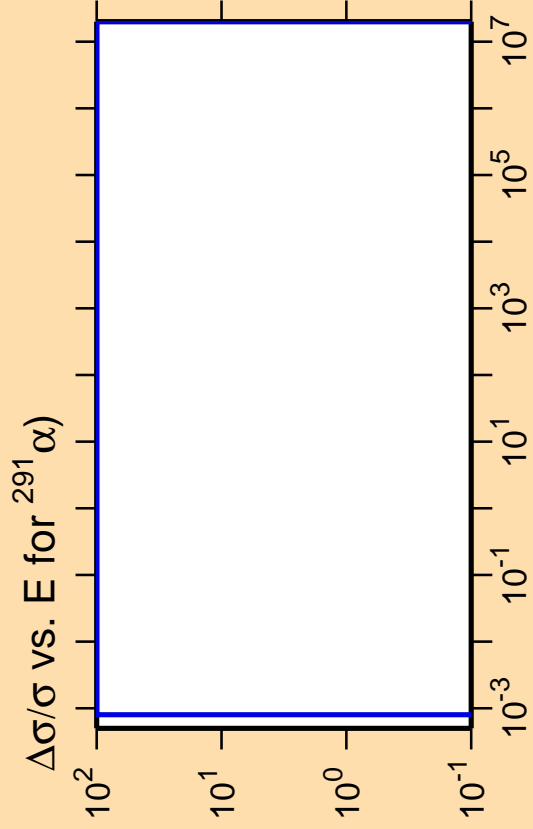
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix



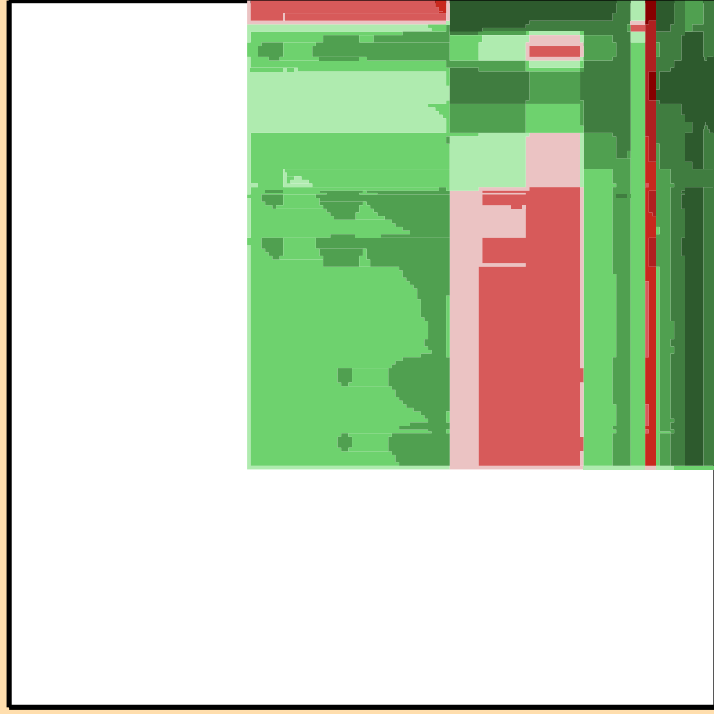
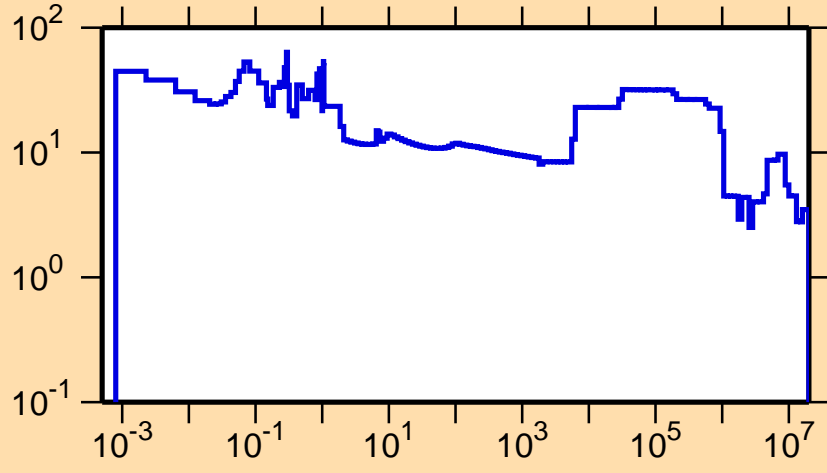


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

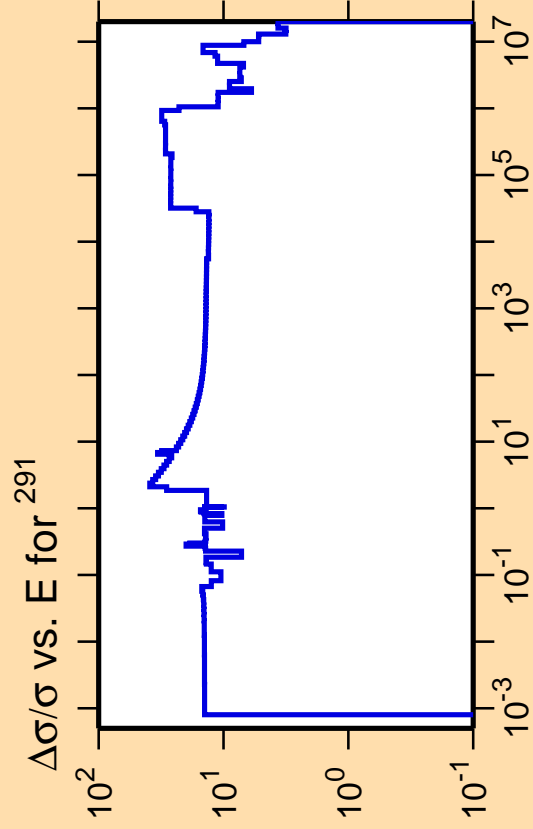
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



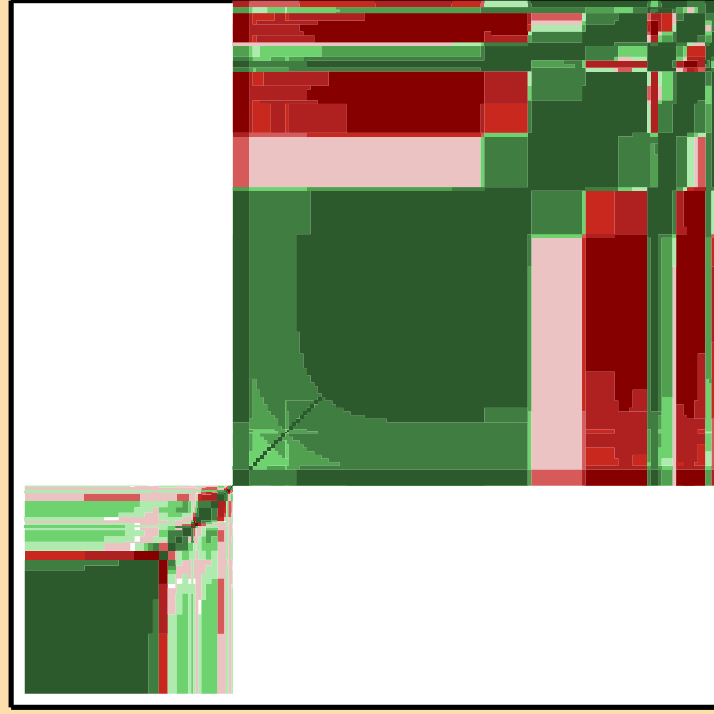
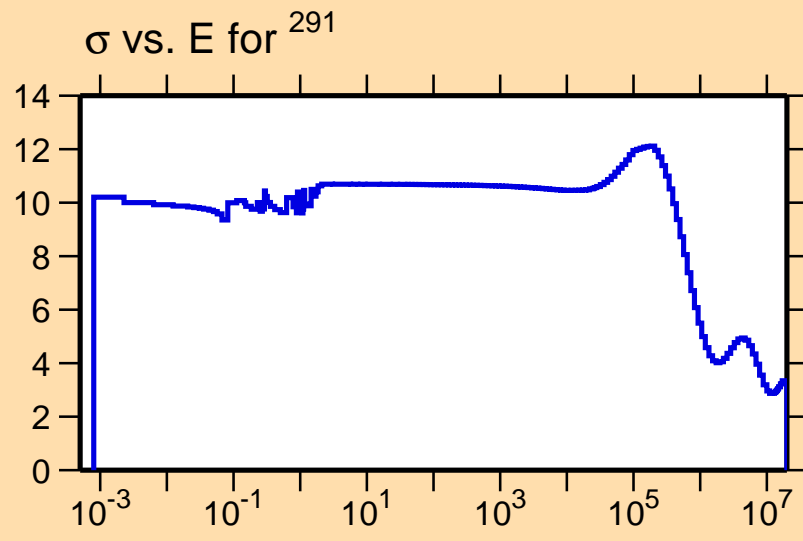
Correlation Matrix





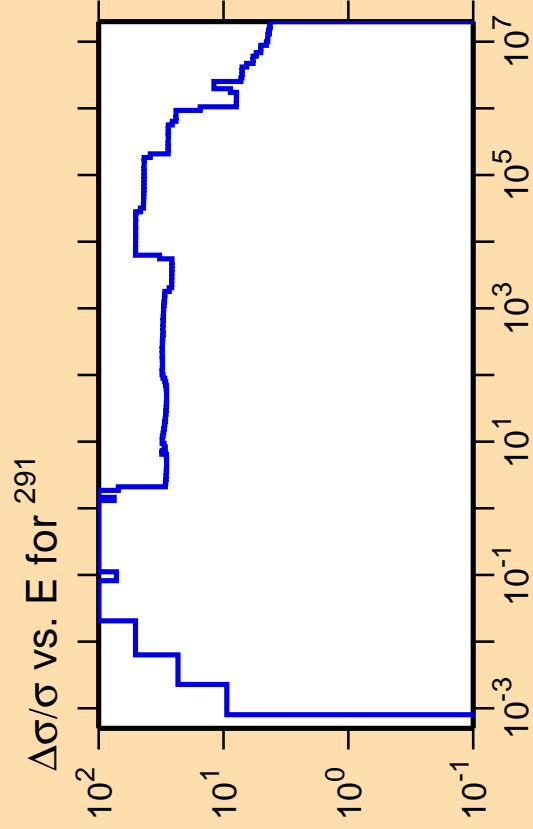
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).



Correlation Matrix



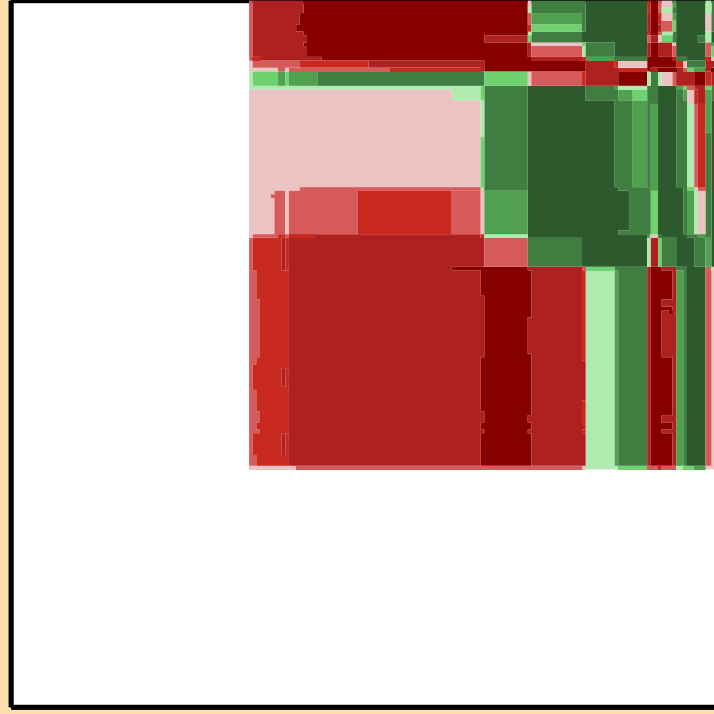
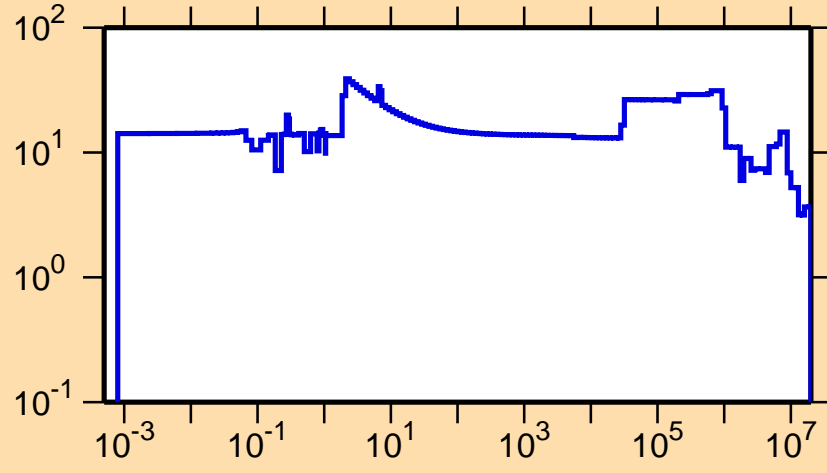


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

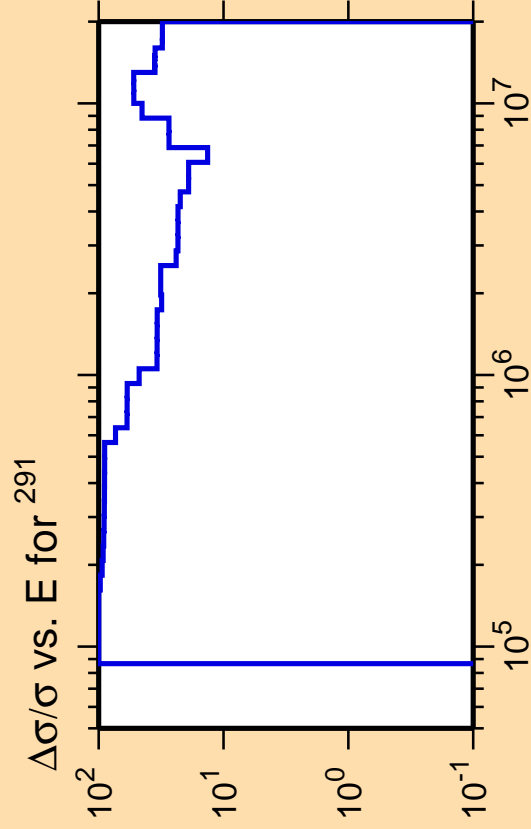
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



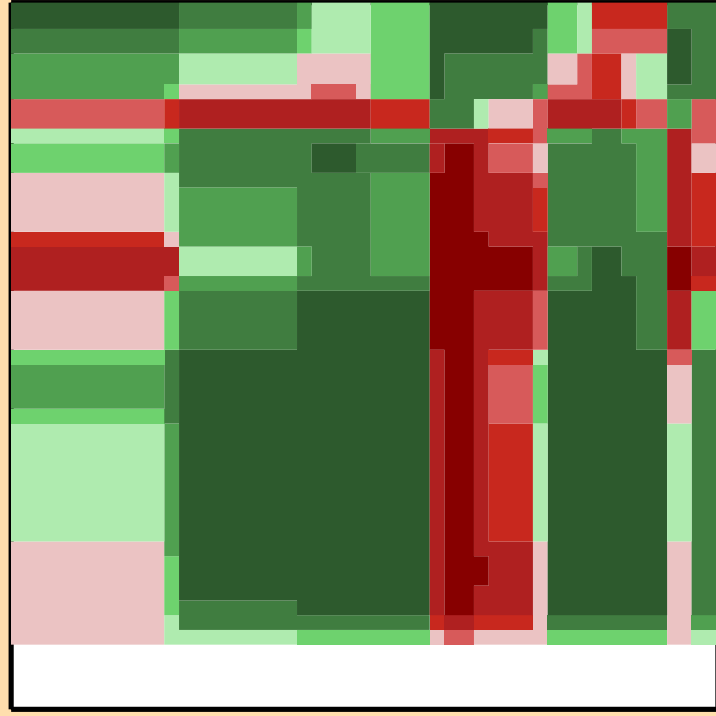
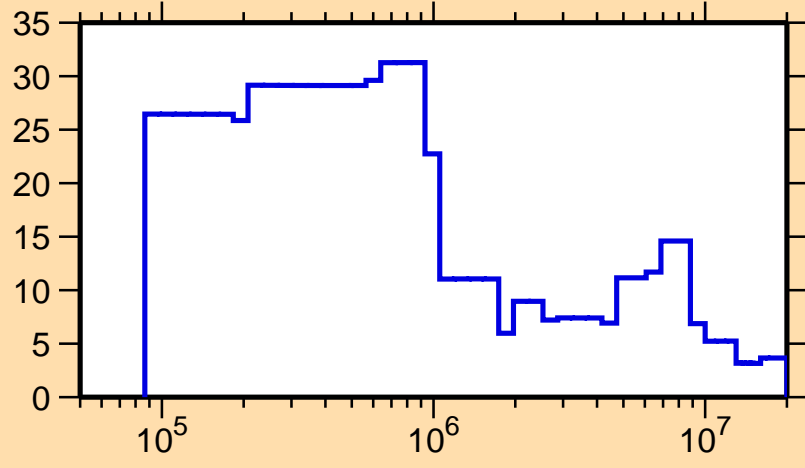


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

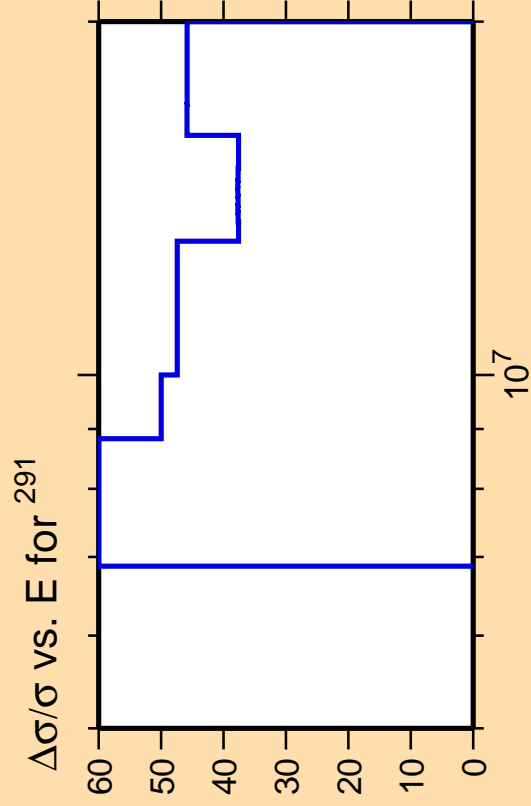
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix

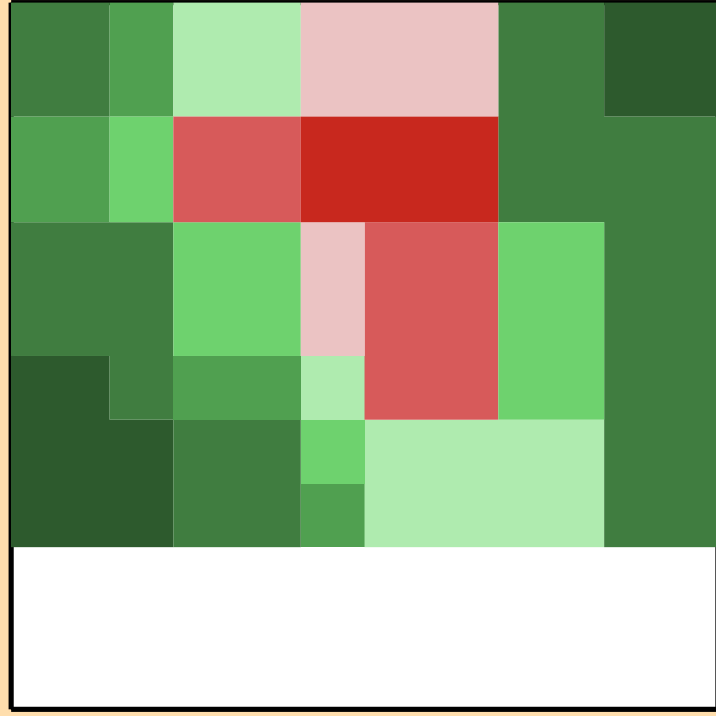
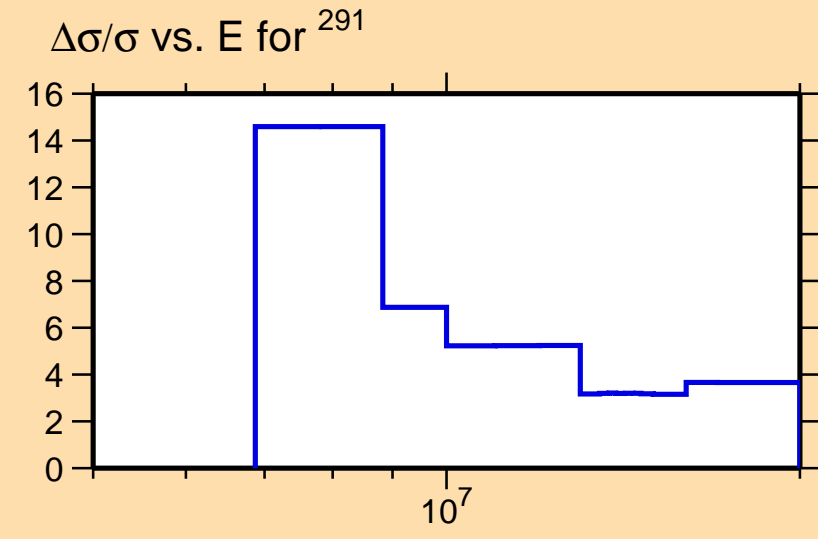




Ordinate scale is %  
relative standard deviation.

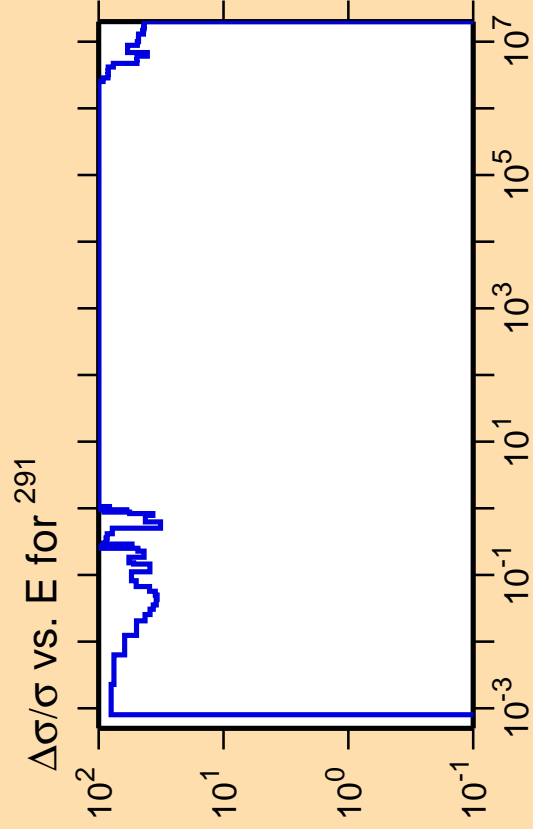
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

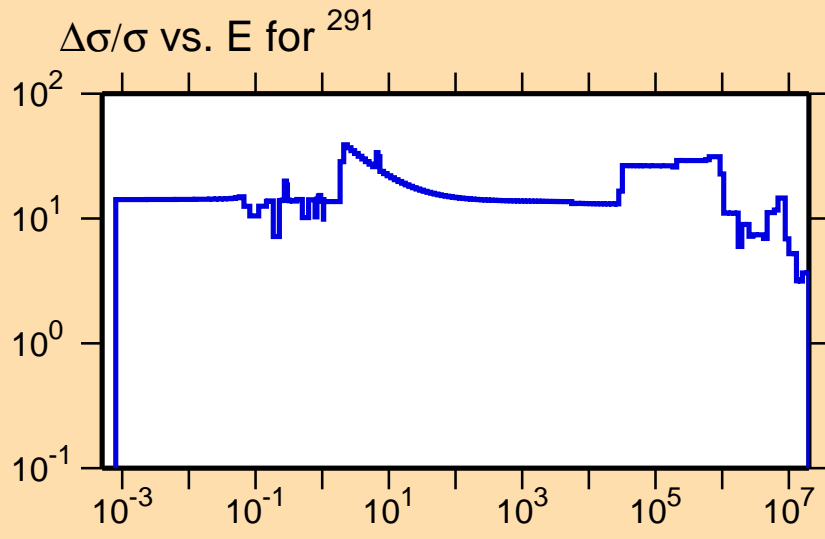




Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

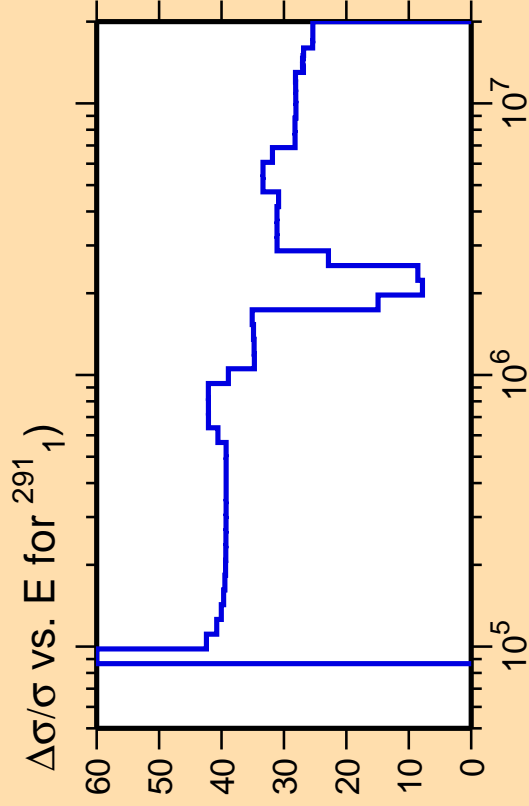
Warning: some uncertainty  
data were suppressed.



Correlation Matrix





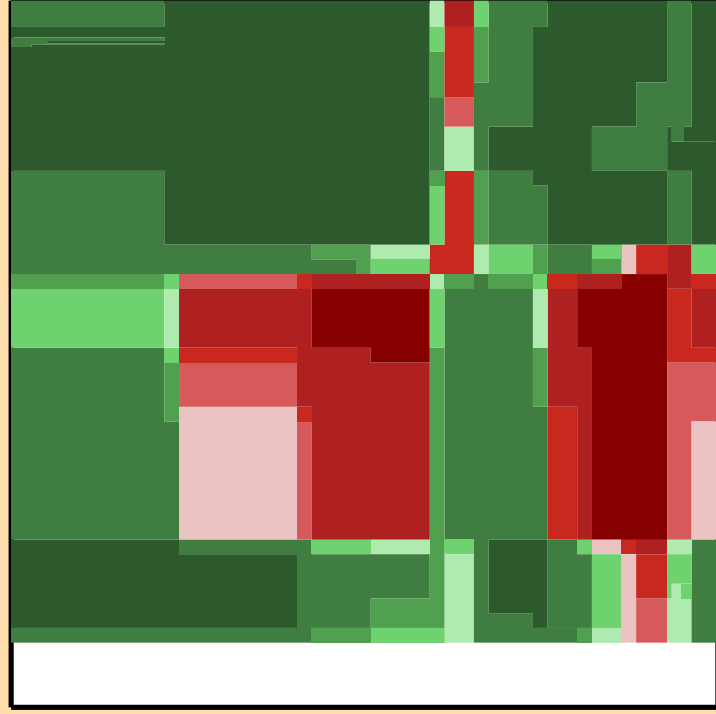
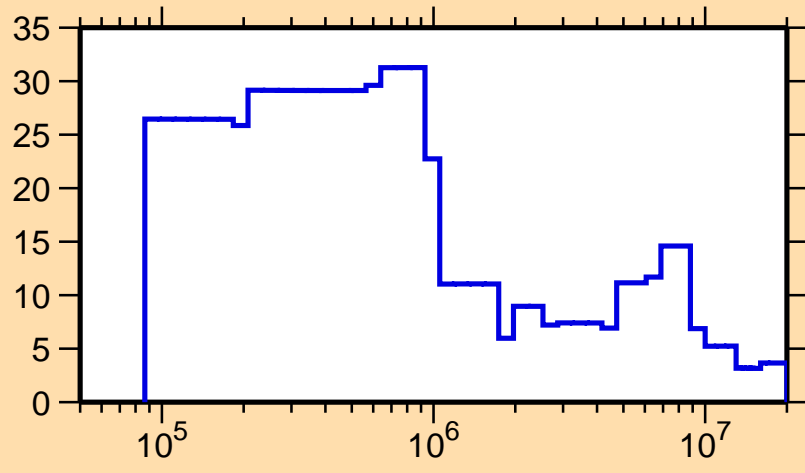


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

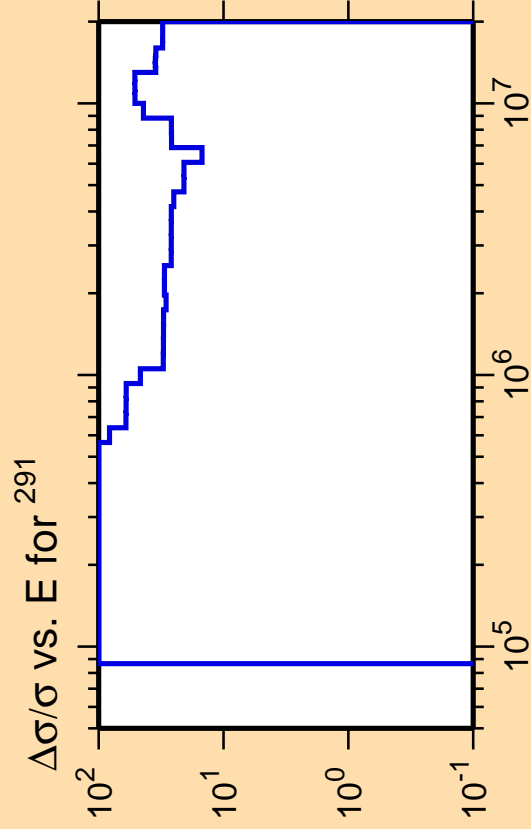
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



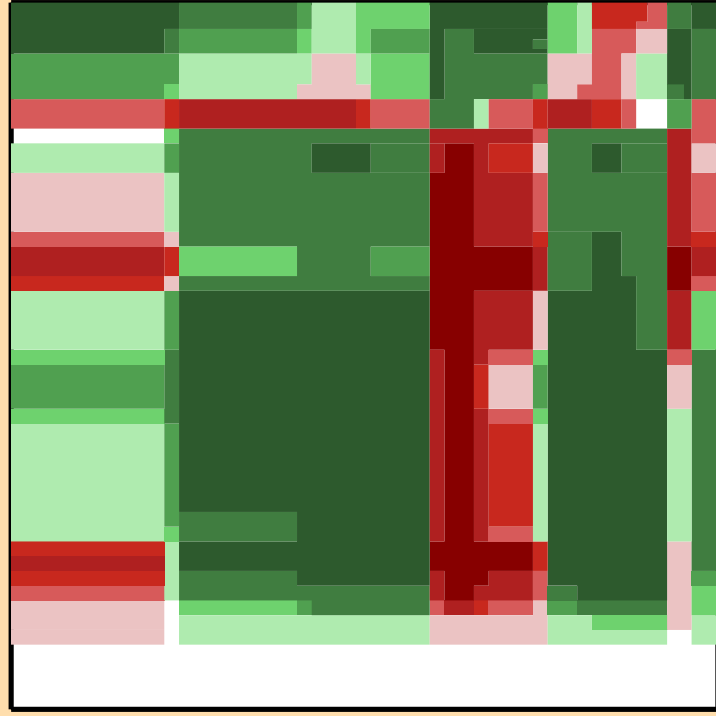
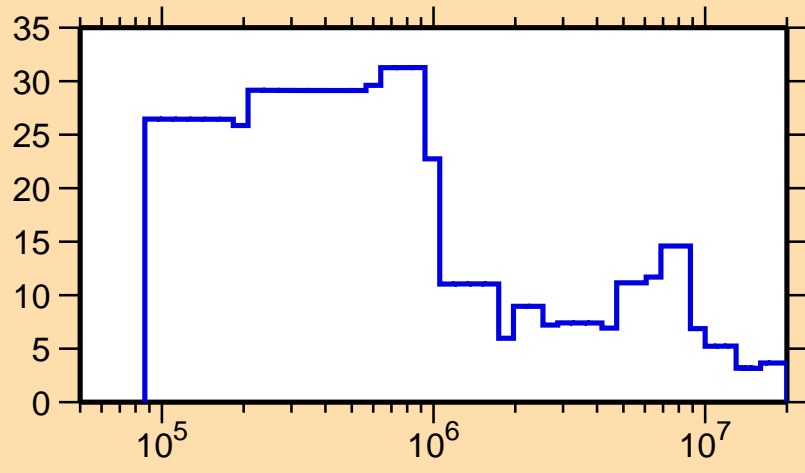


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

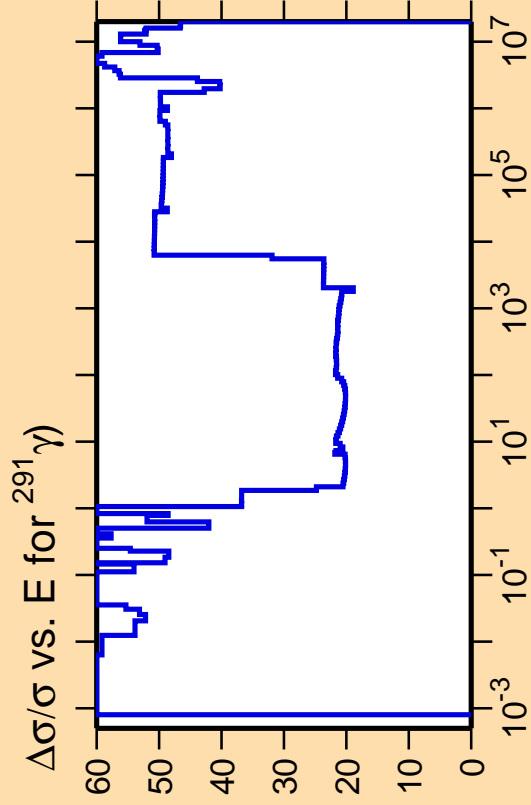
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix

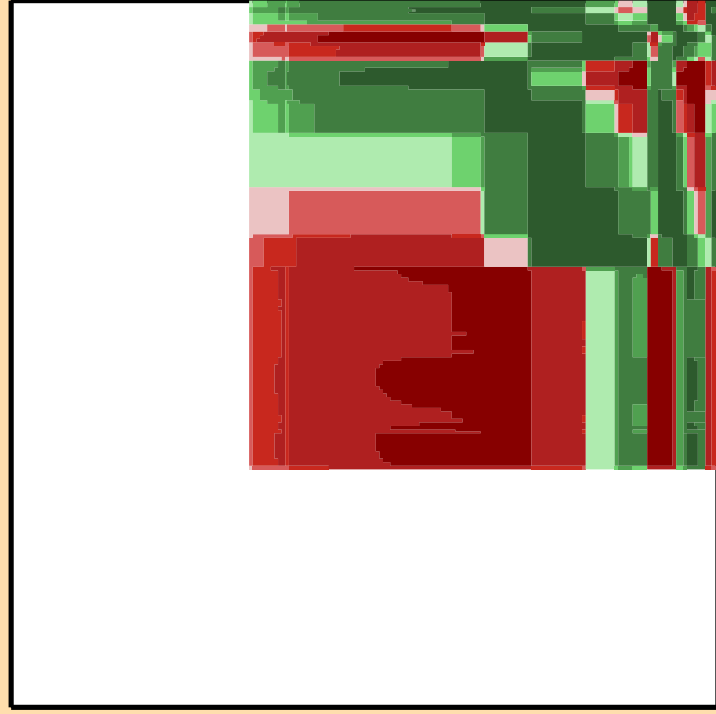
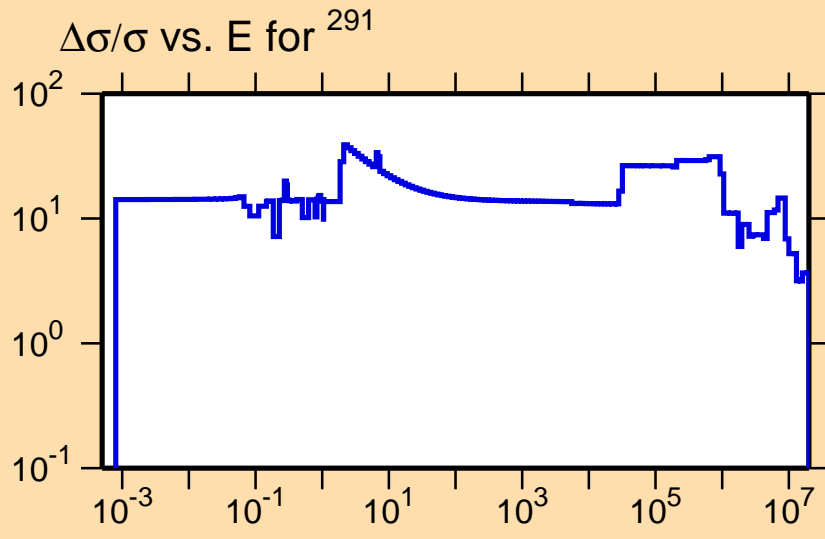




Ordinate scale is %  
relative standard deviation.

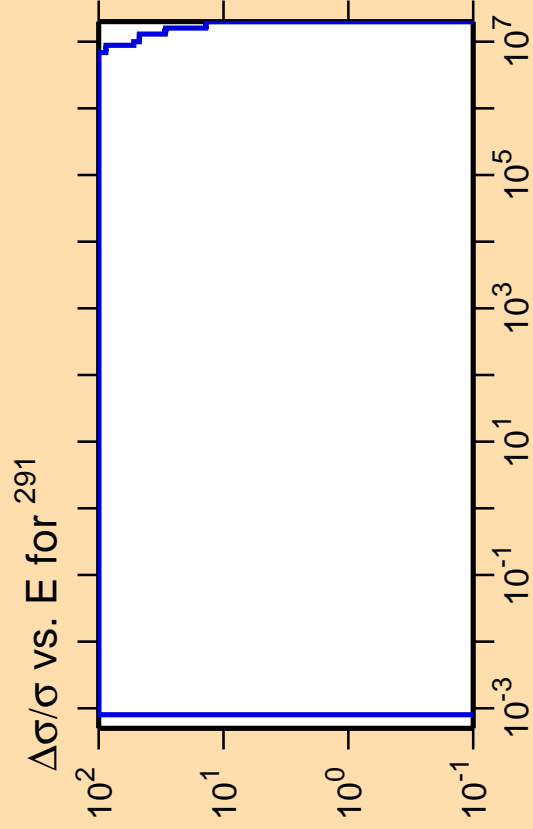
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



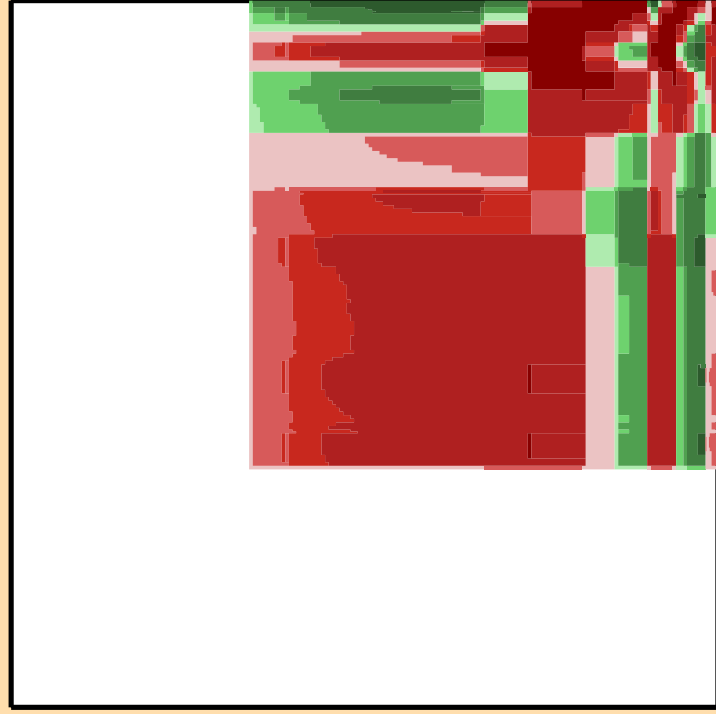
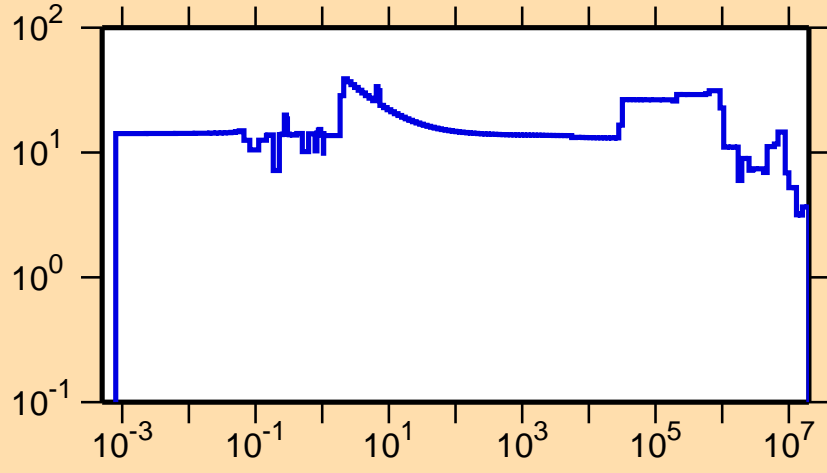


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

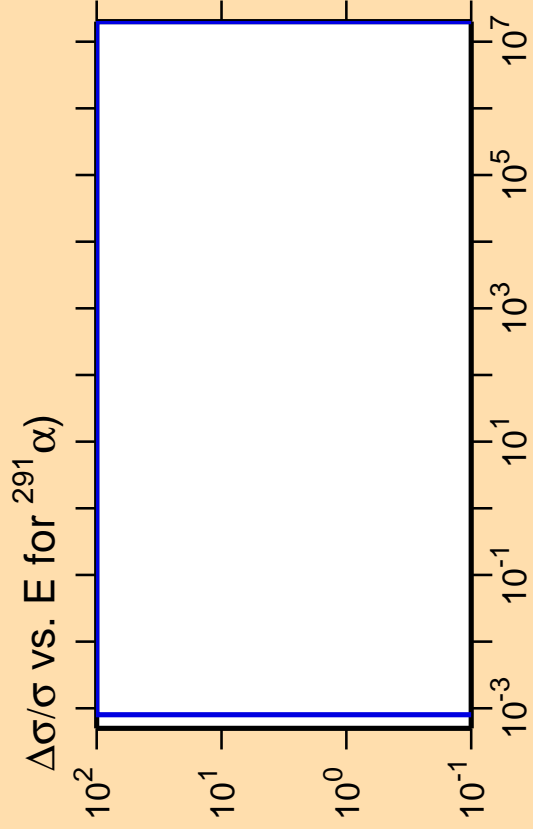
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix



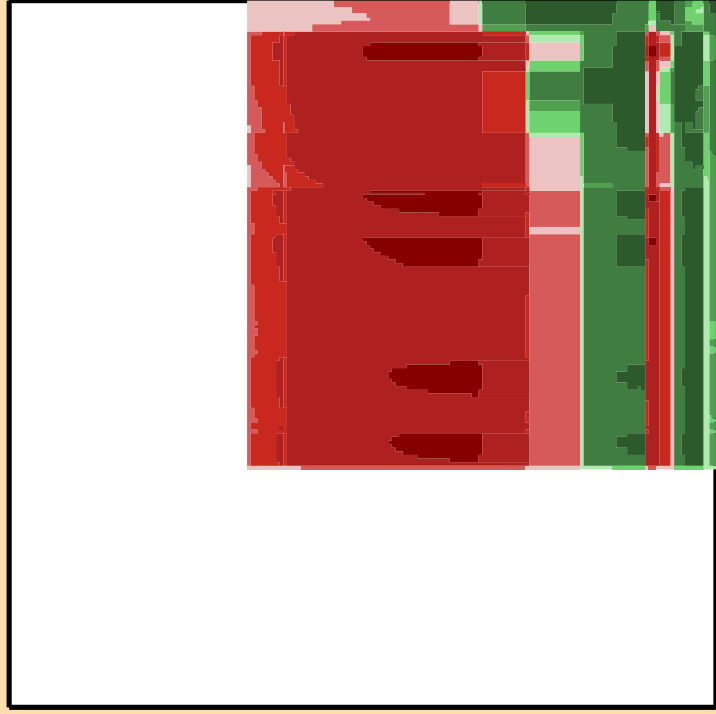
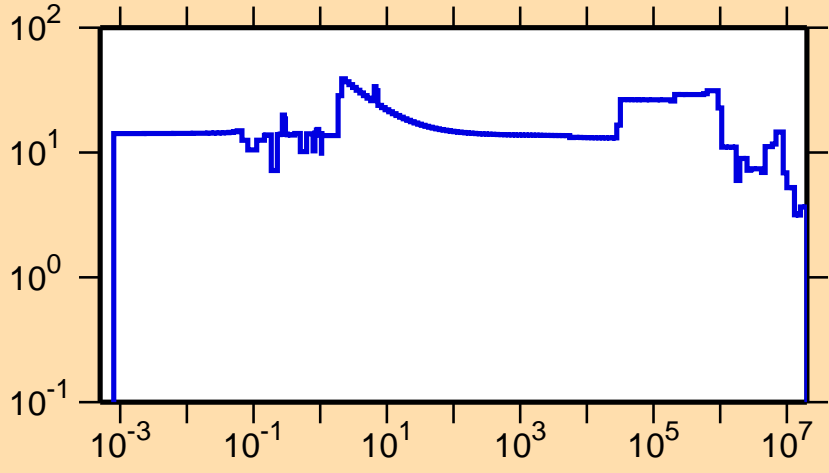


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

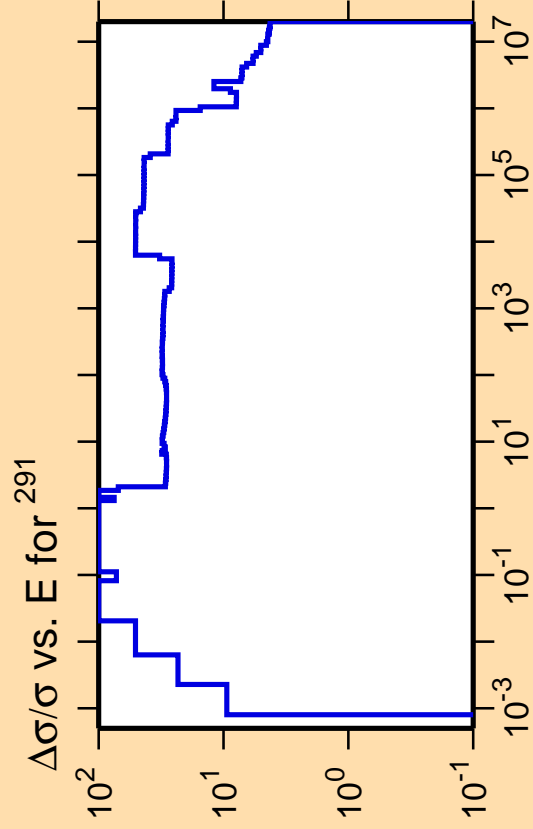
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix

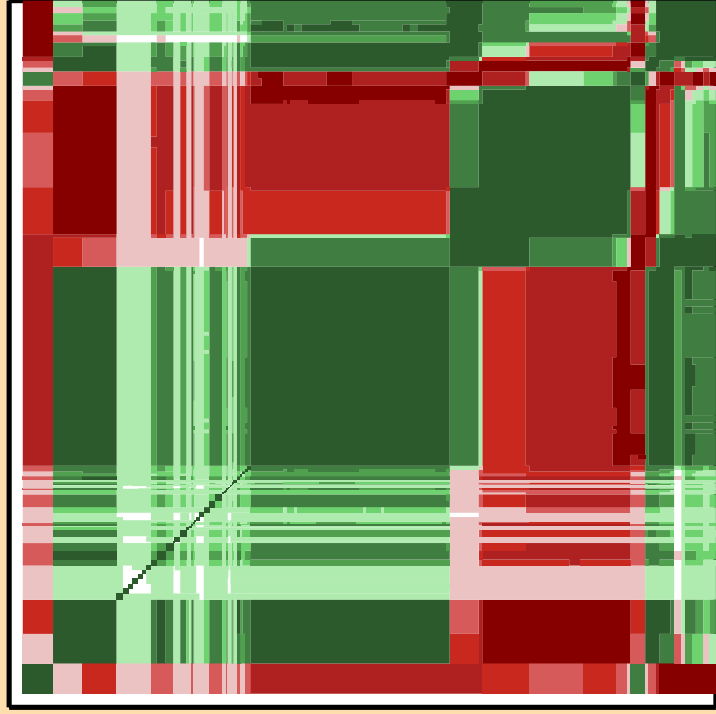
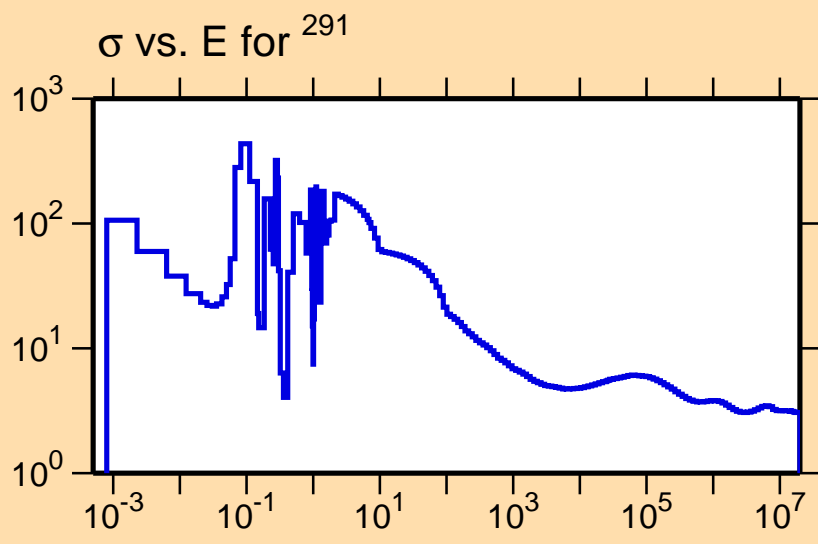




Ordinate scales are % relative standard deviation and barns.

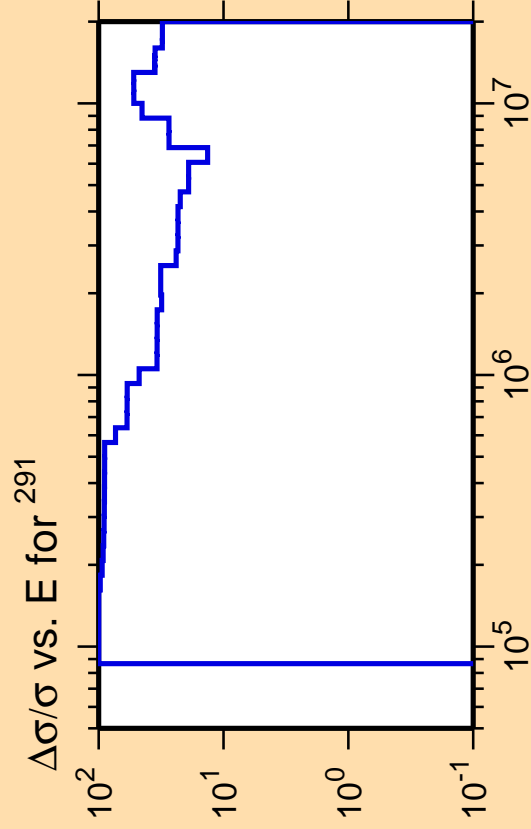
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

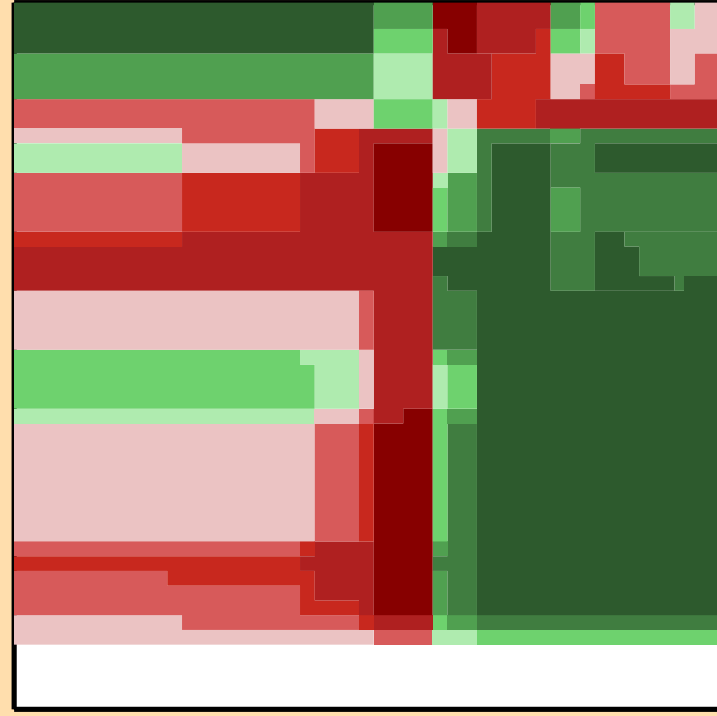
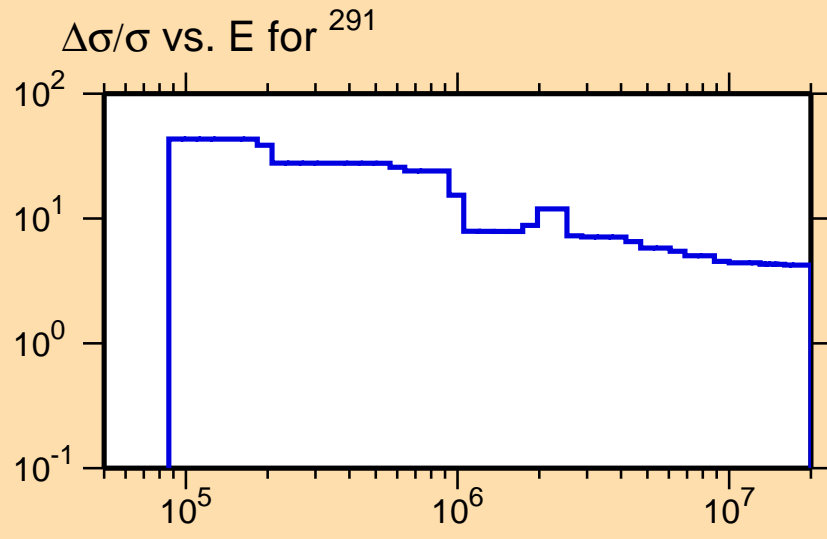




Ordinate scale is %  
relative standard deviation.

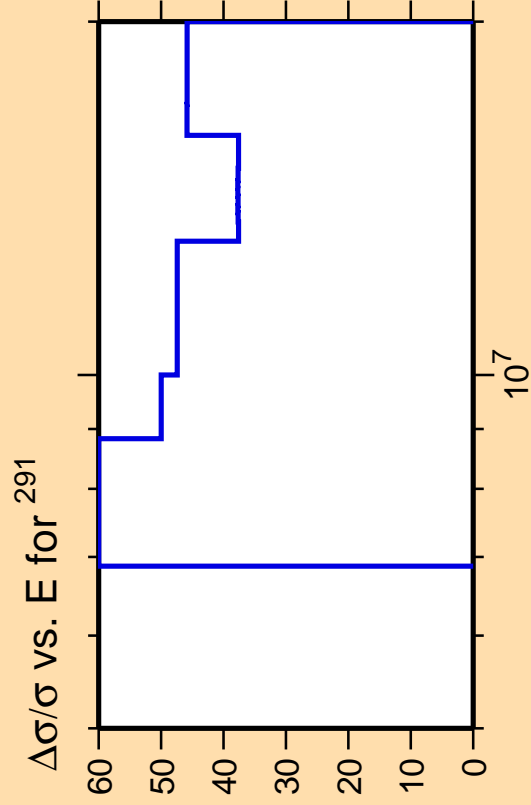
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



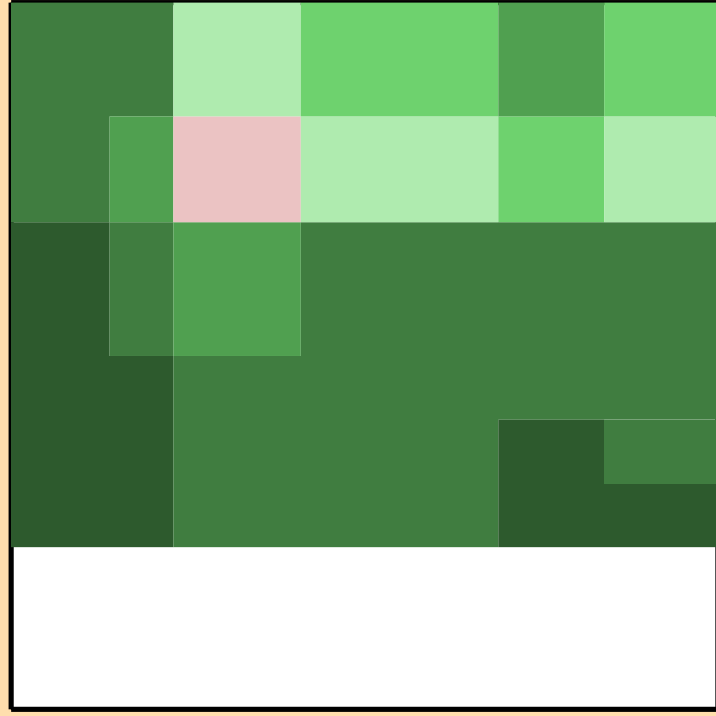
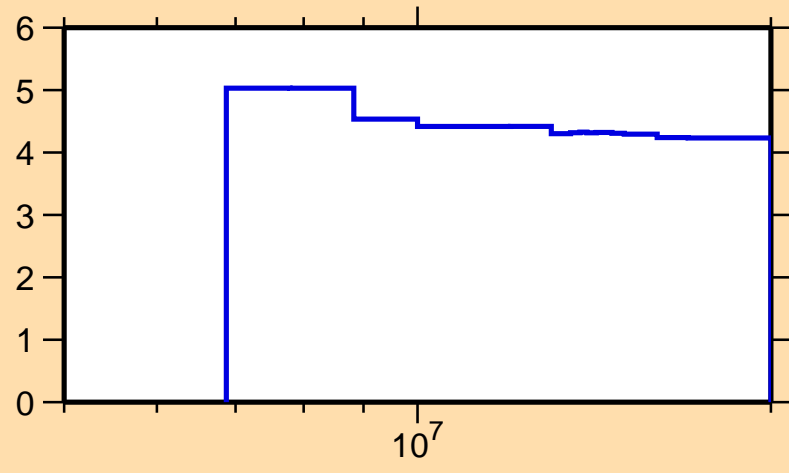


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.

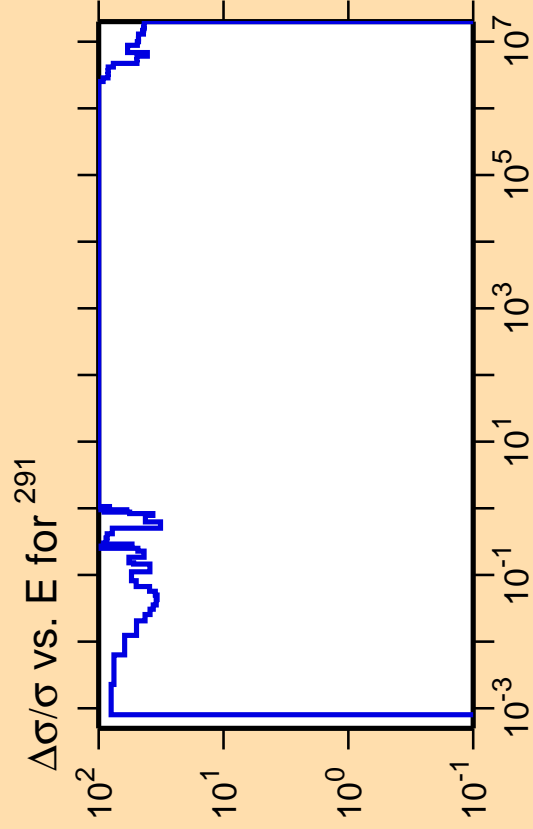
$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix





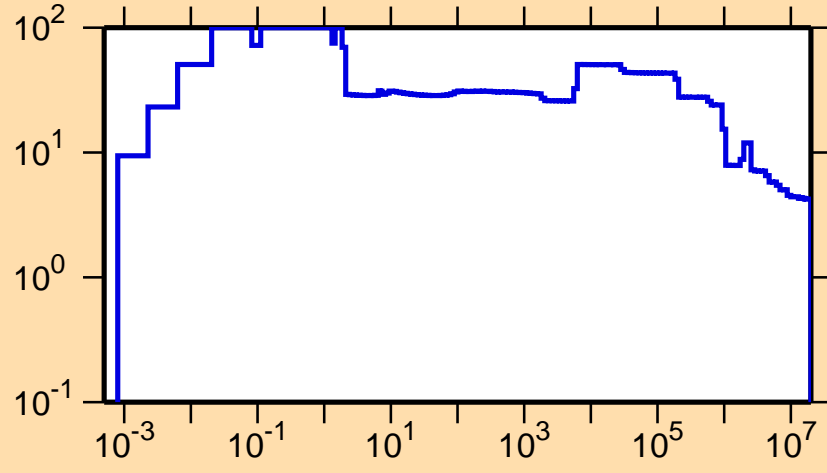


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

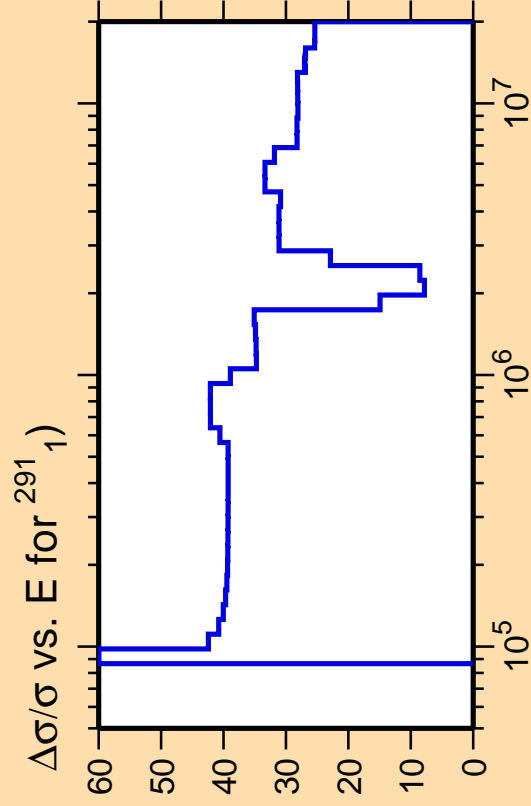
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix

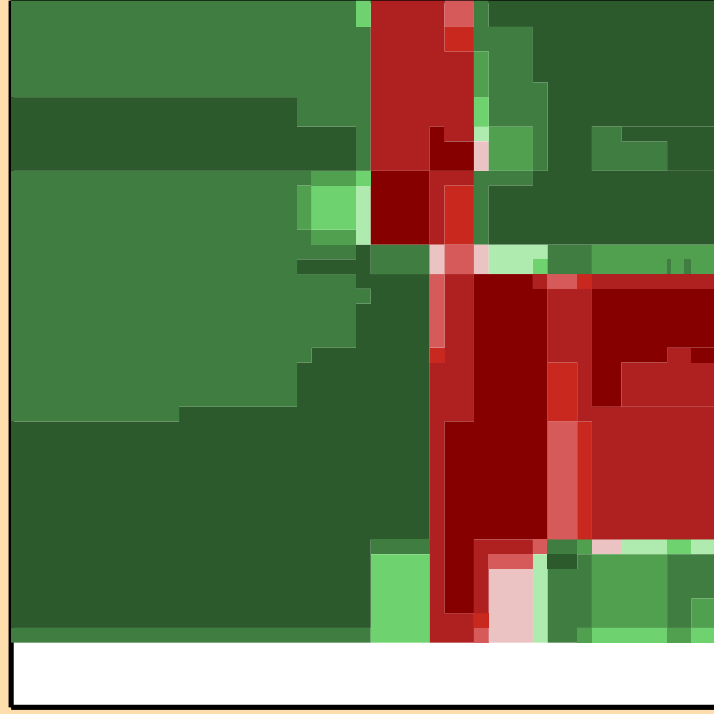
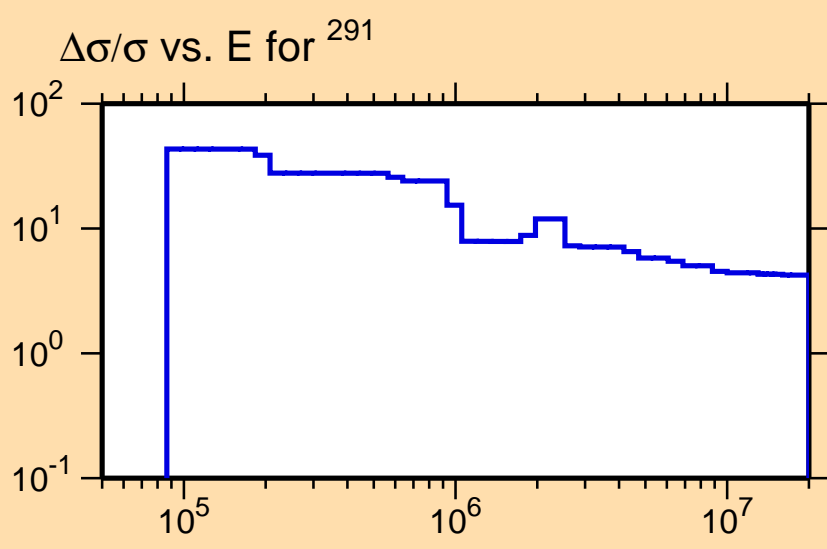




Ordinate scale is %  
relative standard deviation.

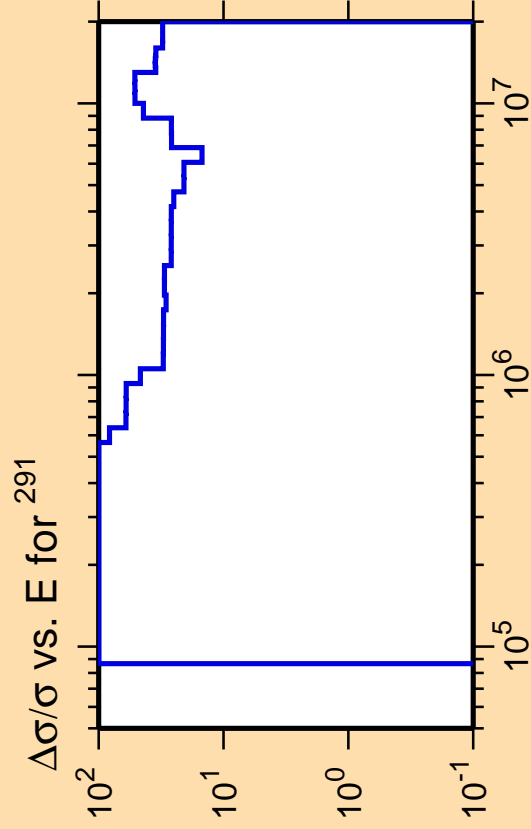
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



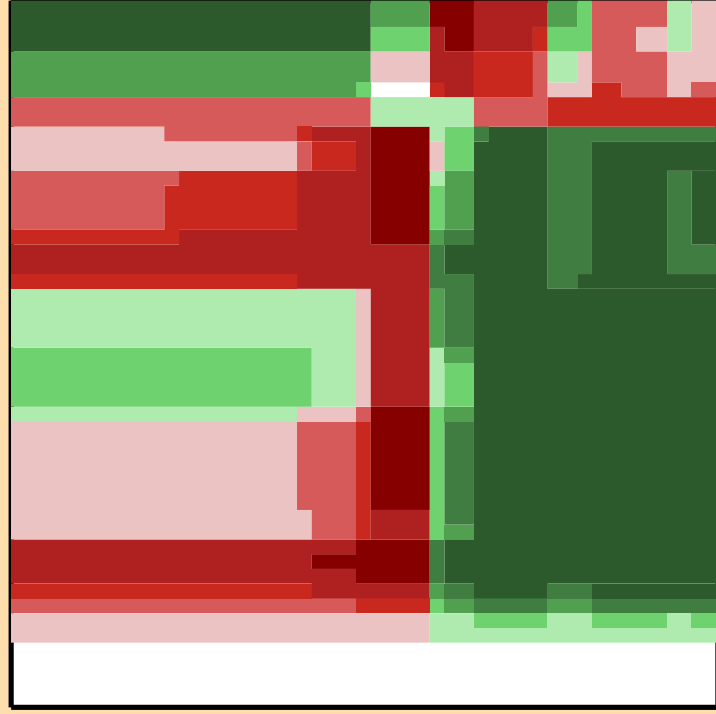
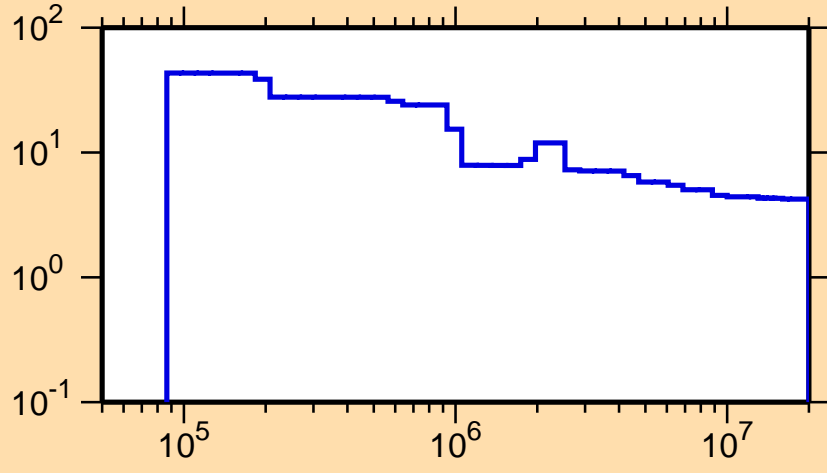


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

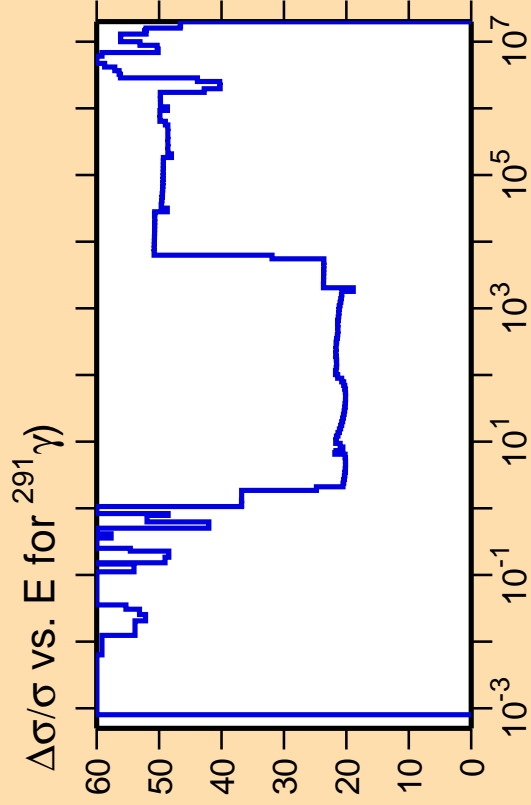
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



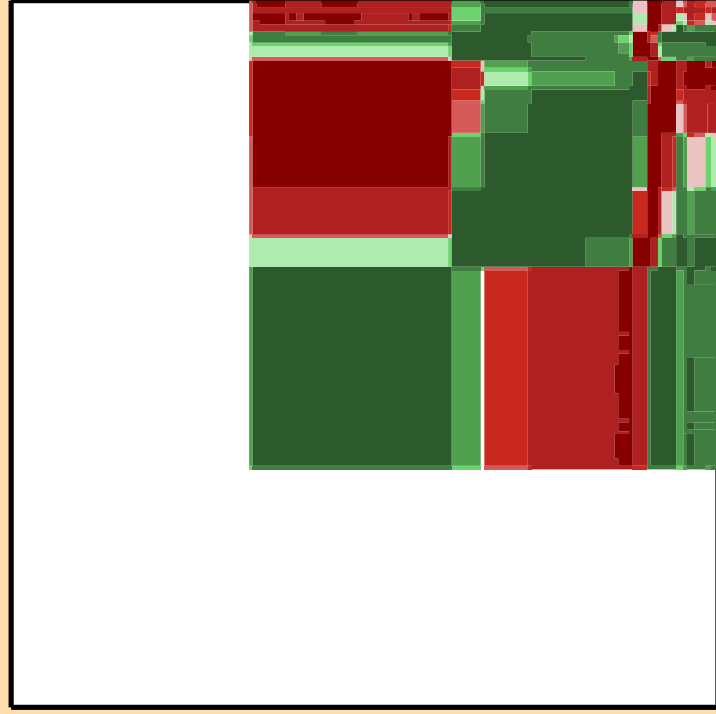
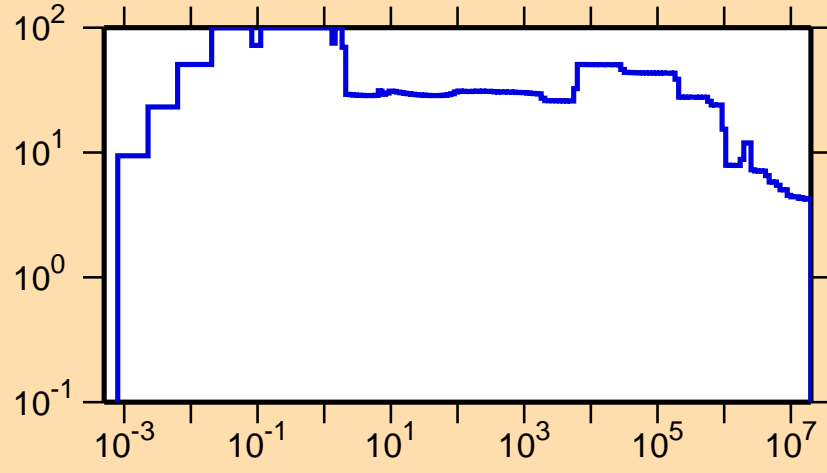


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

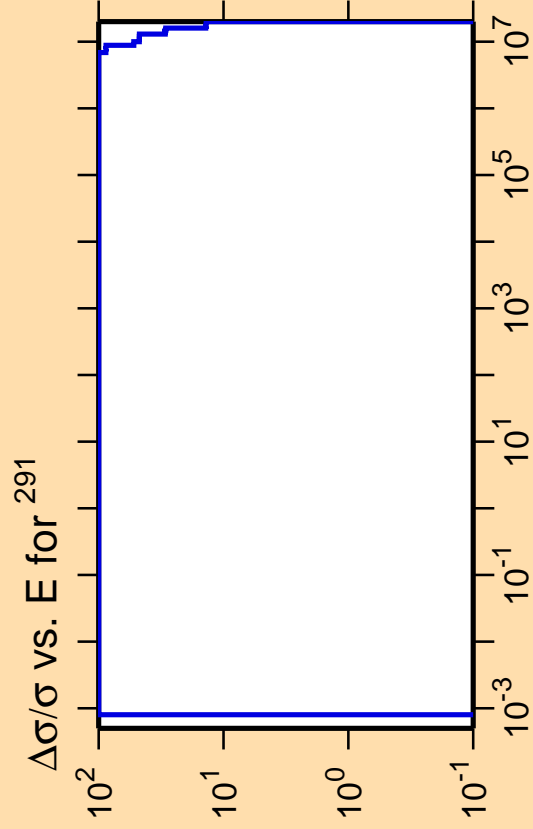
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



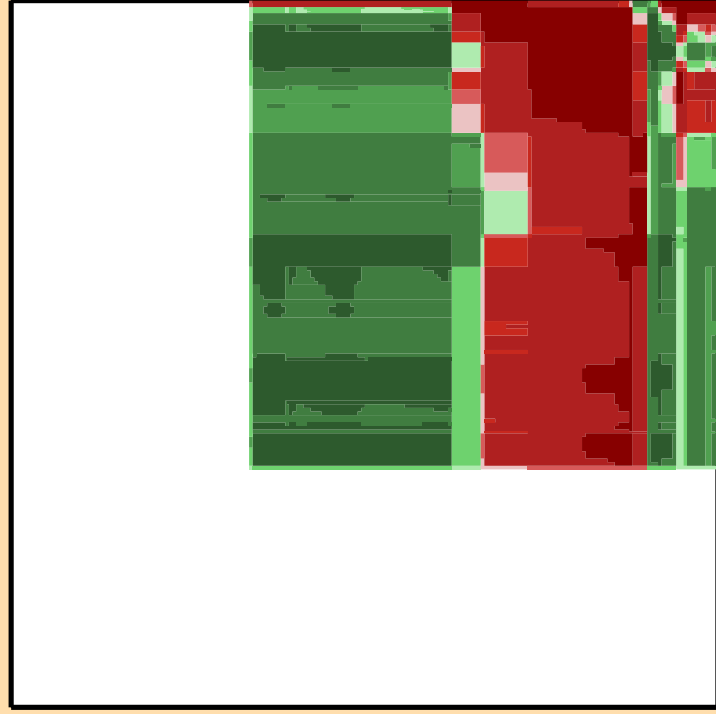
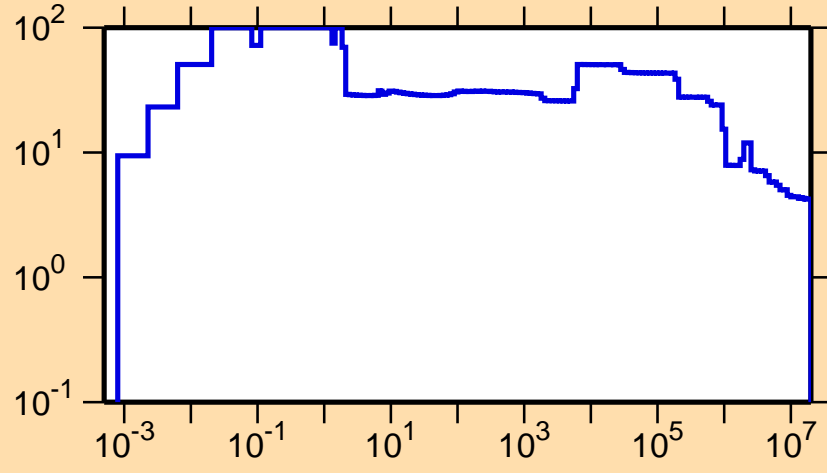


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

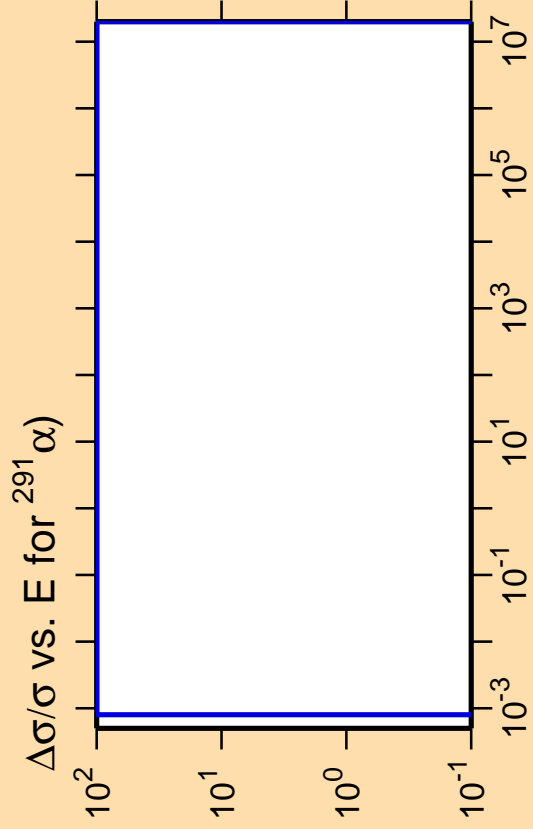
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



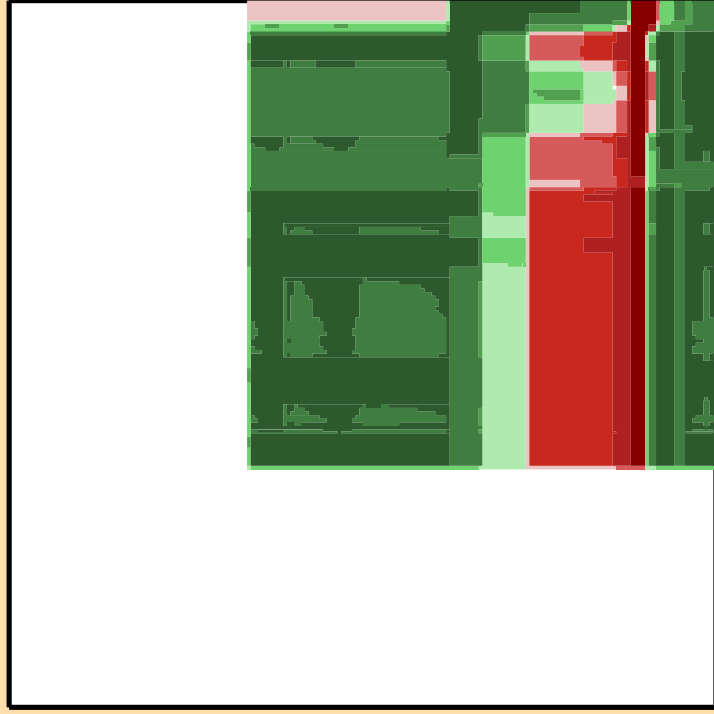
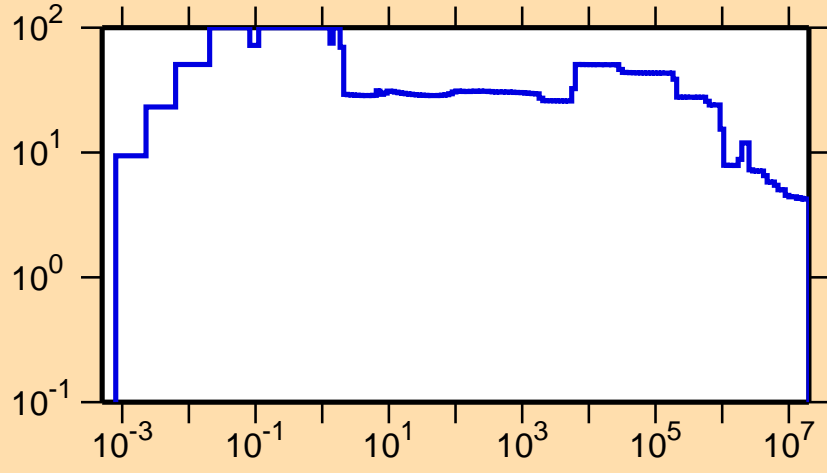


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

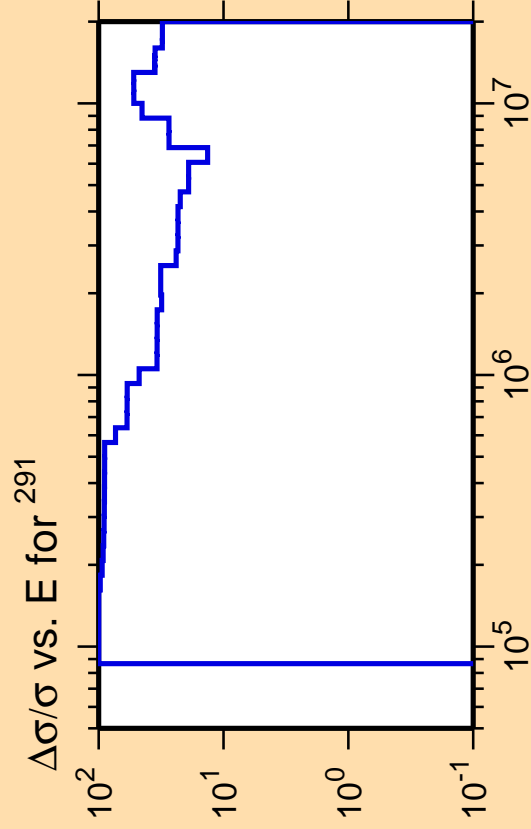
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



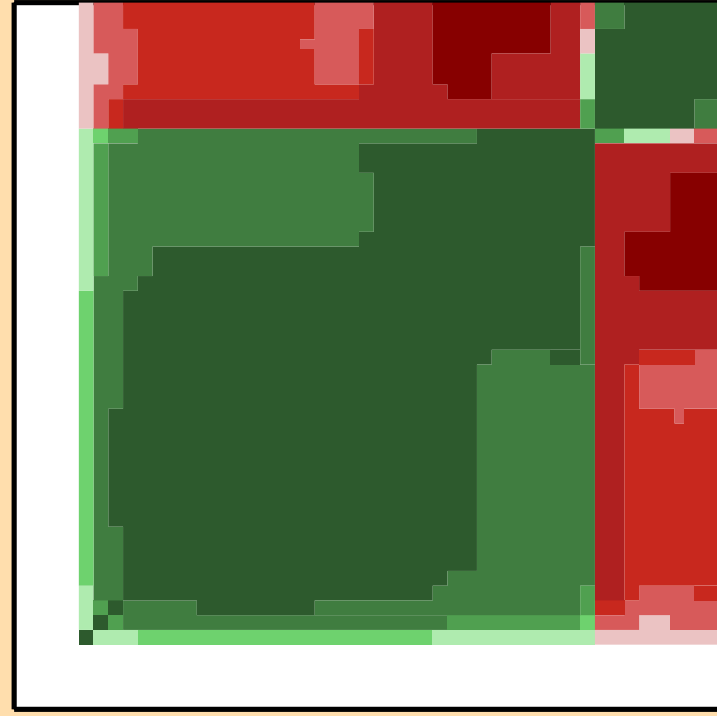
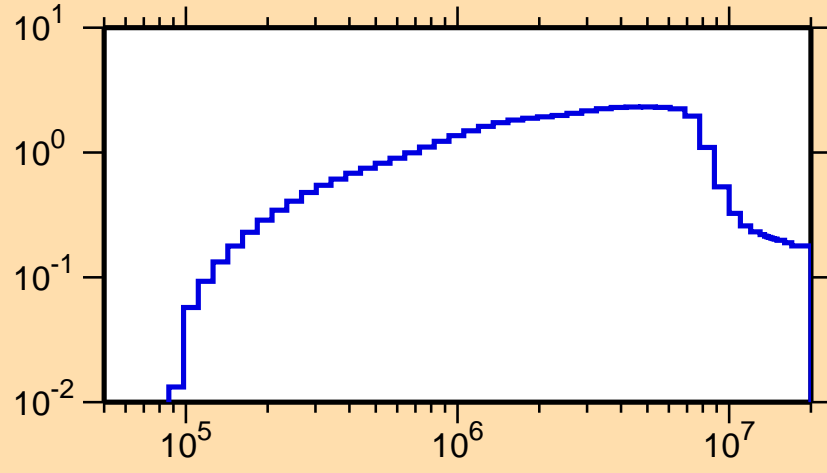


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

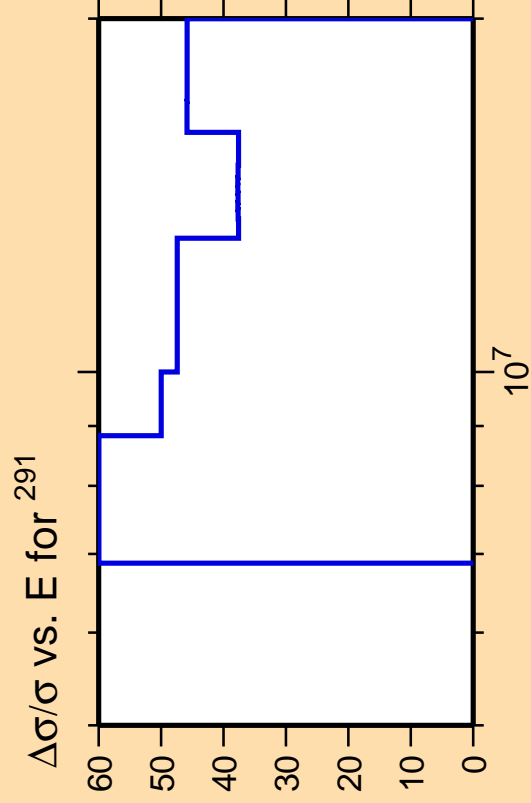
Warning: some uncertainty data were suppressed.

$\sigma$  vs. E for  $^{291}$



Correlation Matrix

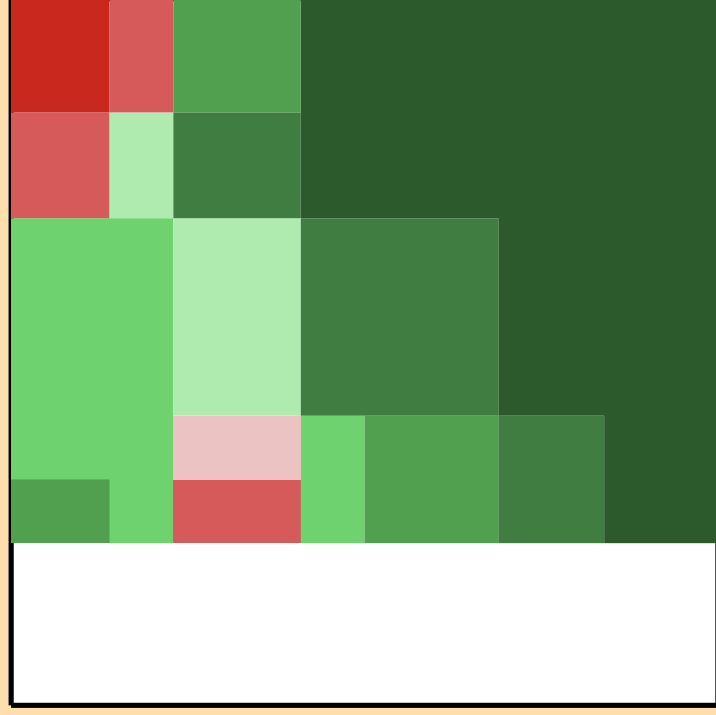
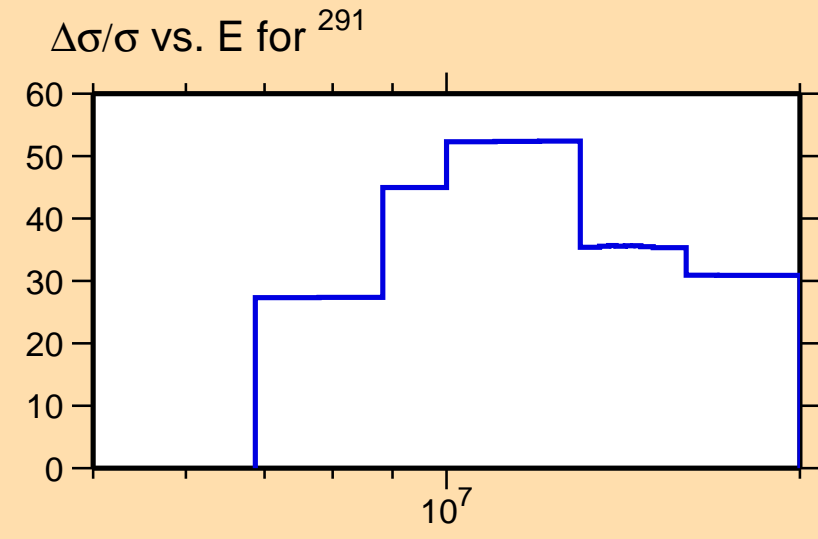




Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

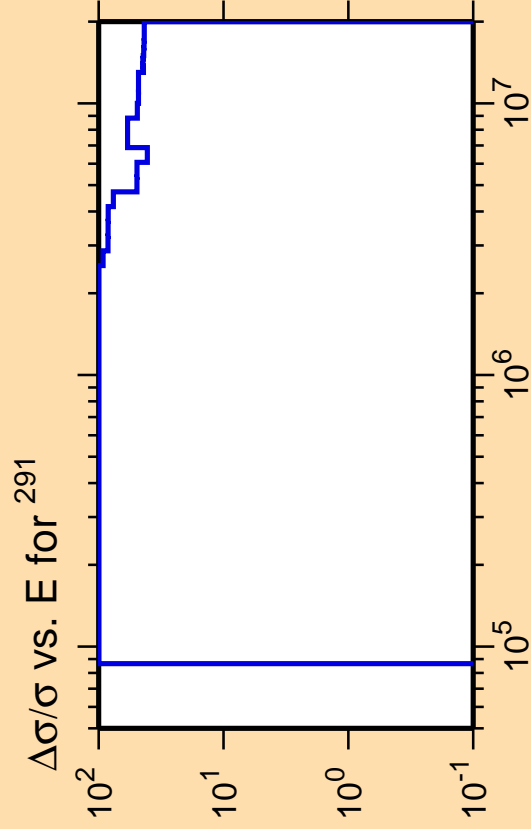
Warning: some uncertainty  
data were suppressed.



Correlation Matrix



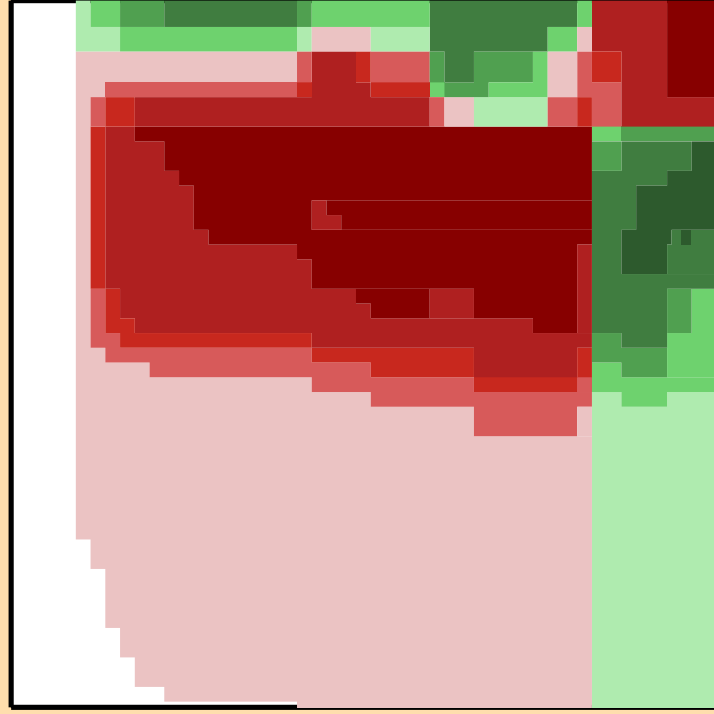
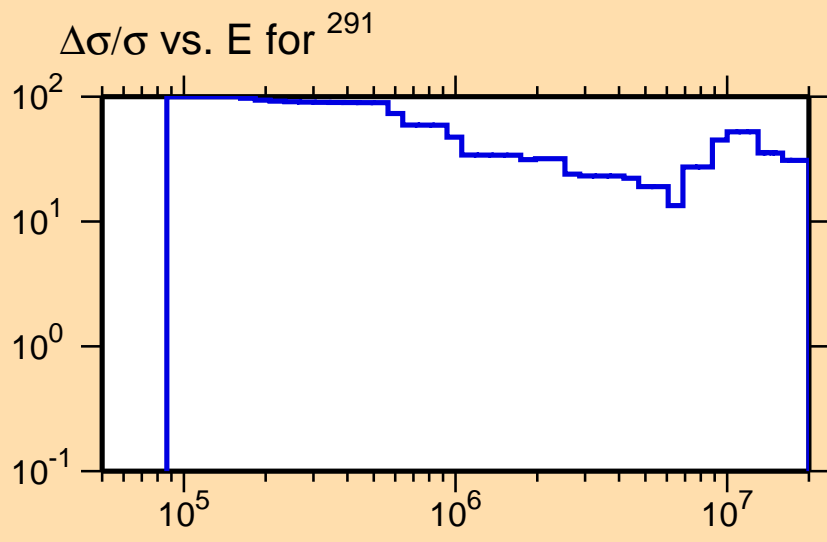




Ordinate scale is %  
relative standard deviation.

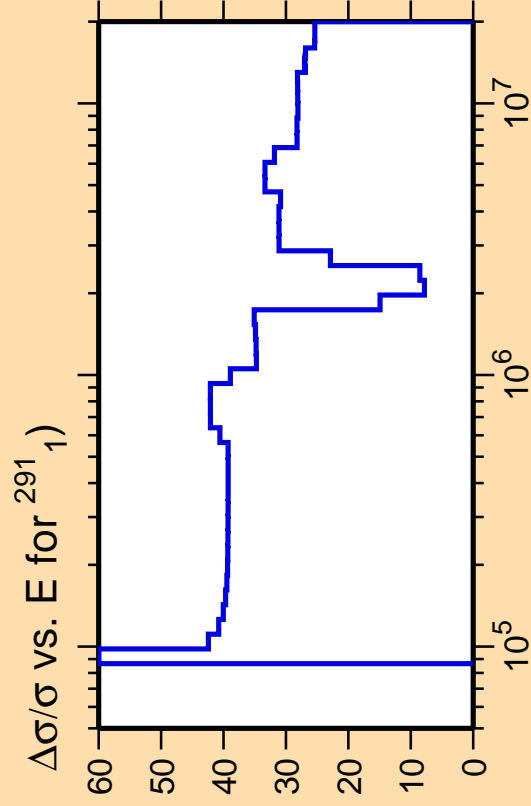
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

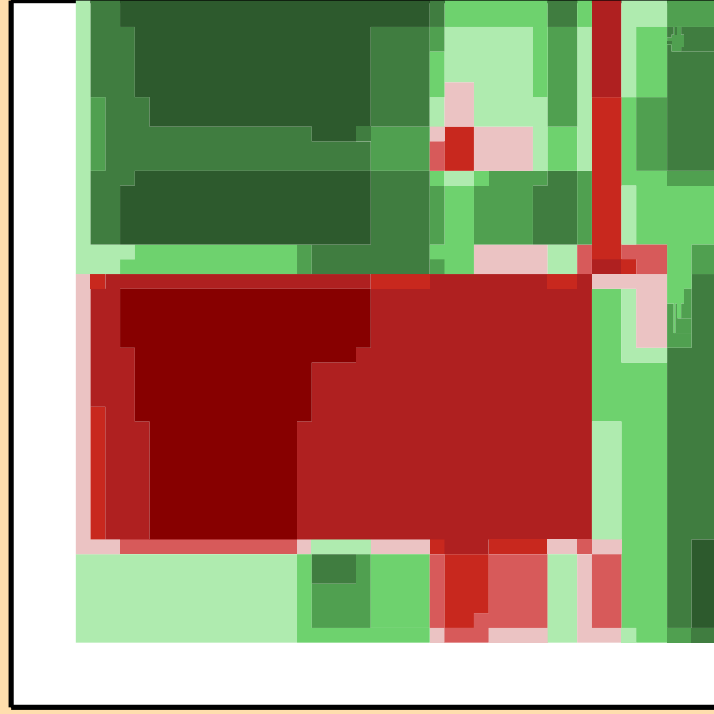
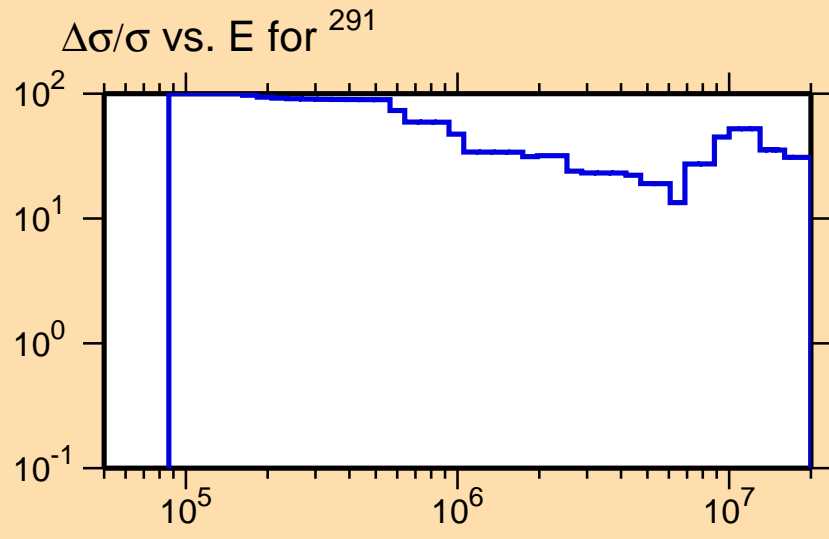




Ordinate scale is %  
relative standard deviation.

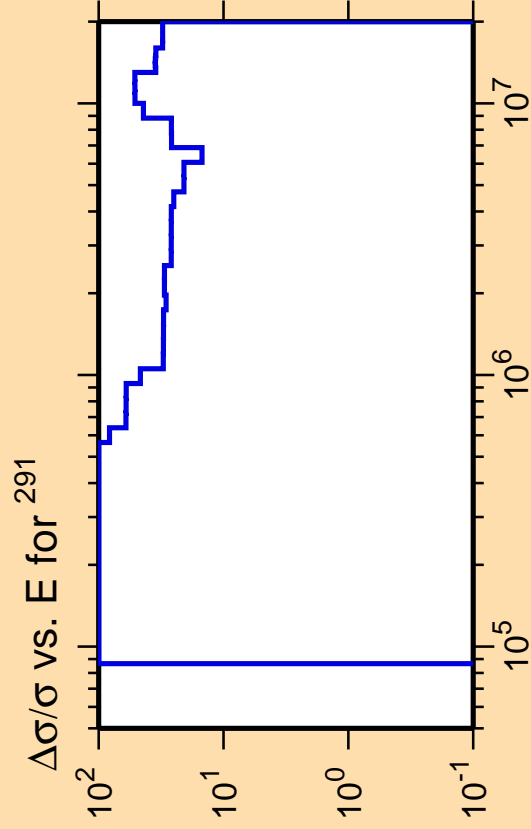
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

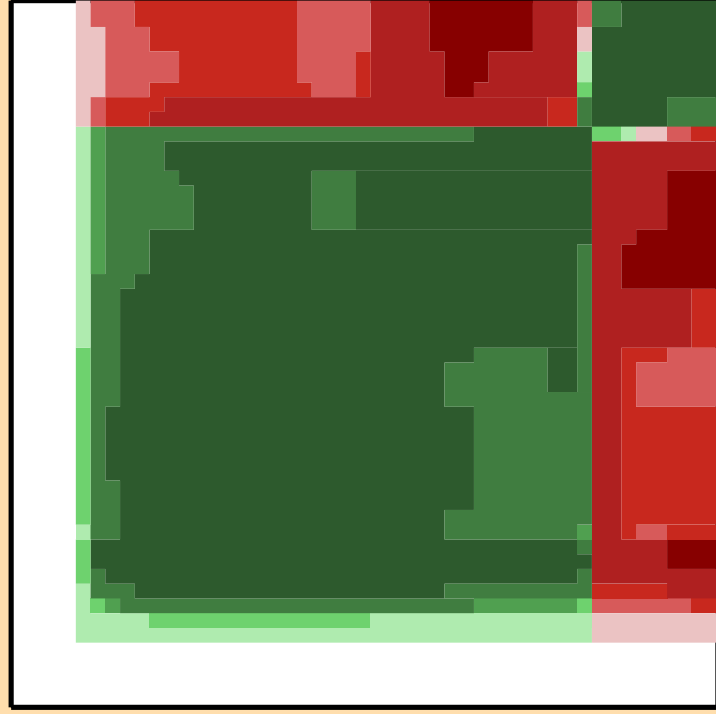
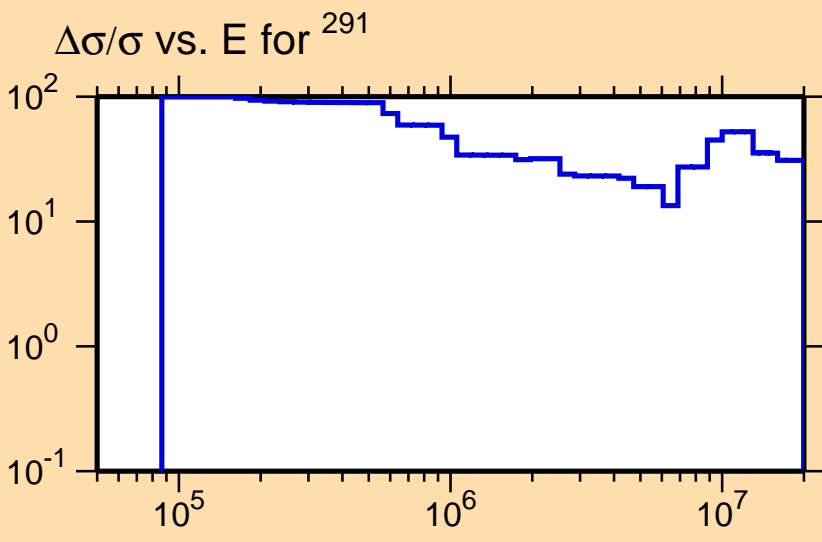




Ordinate scale is %  
relative standard deviation.

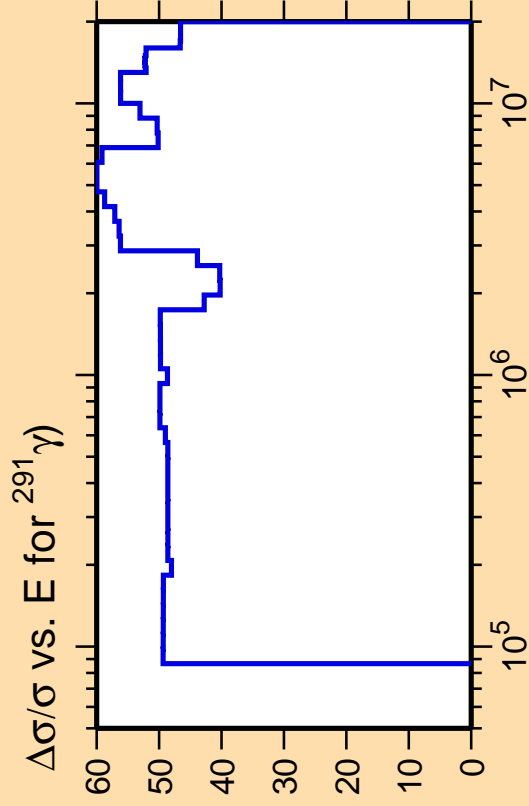
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

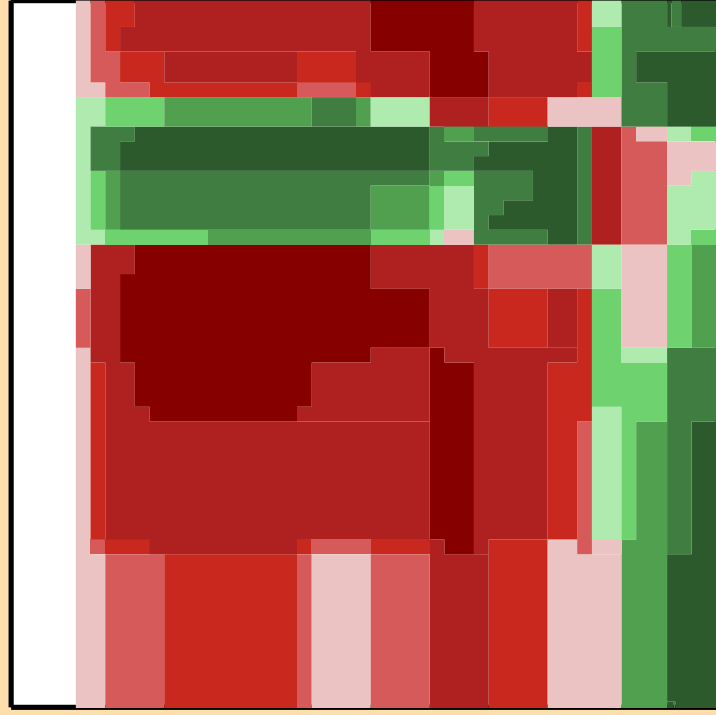
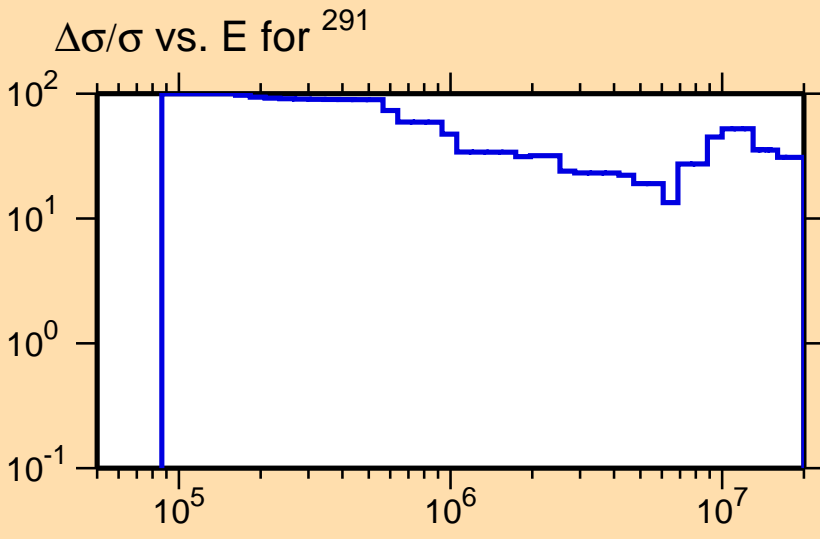




Ordinate scale is %  
relative standard deviation.

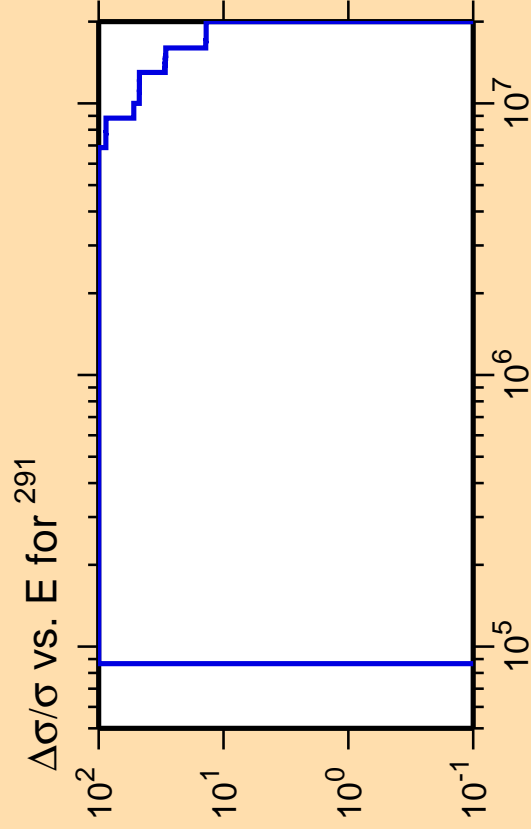
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

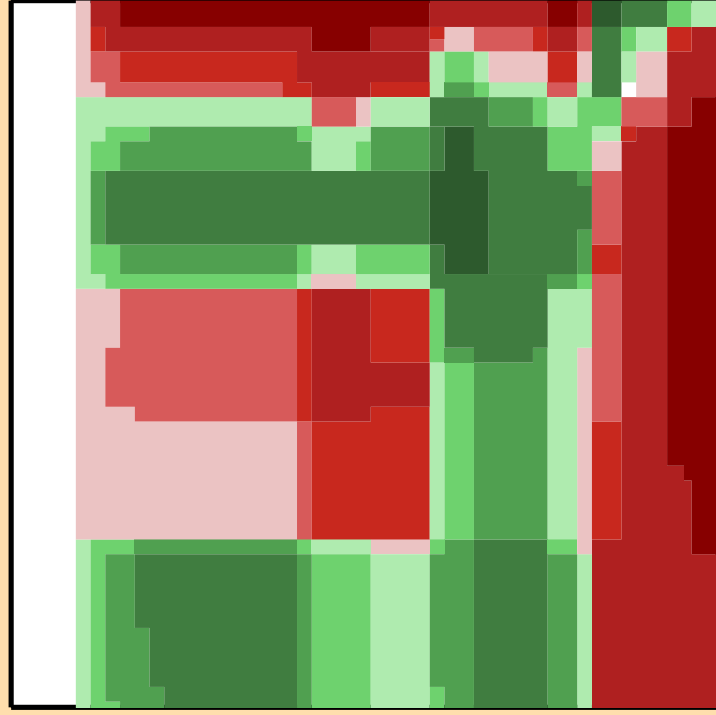
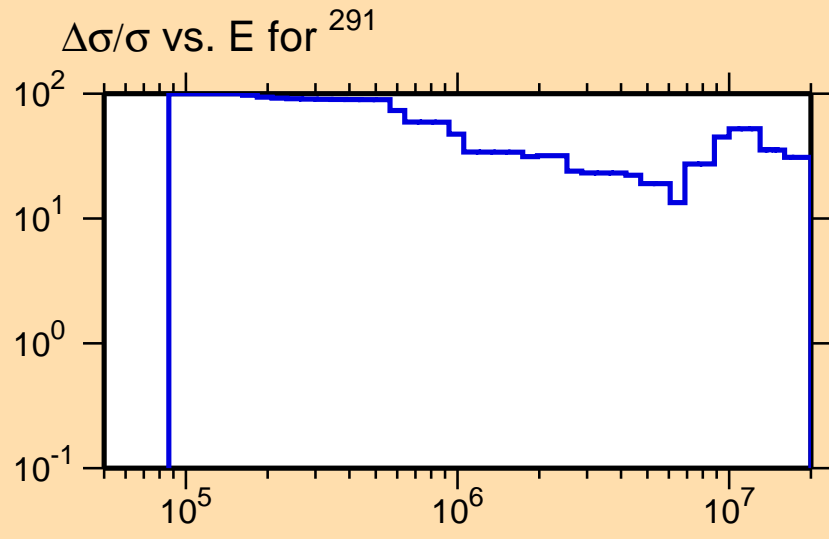




Ordinate scale is %  
relative standard deviation.

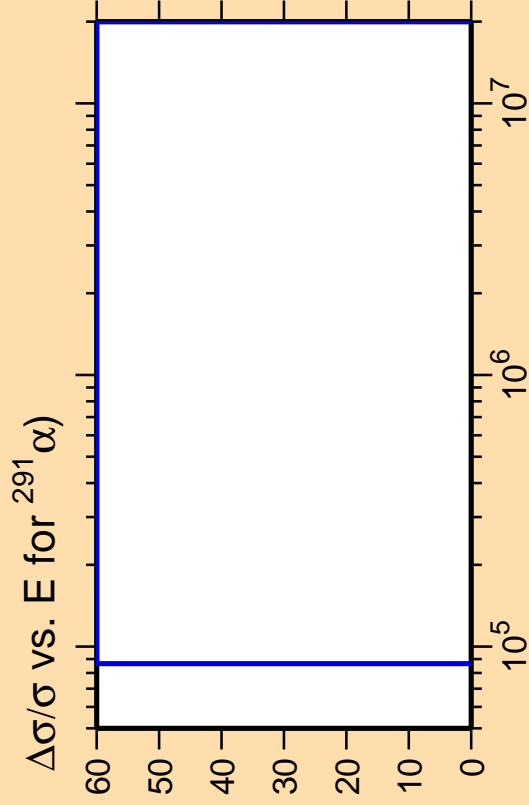
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

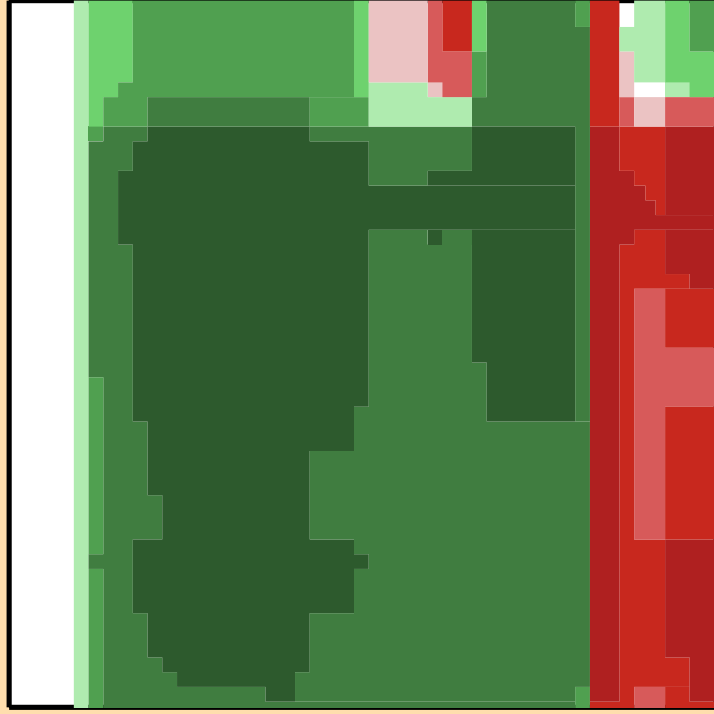
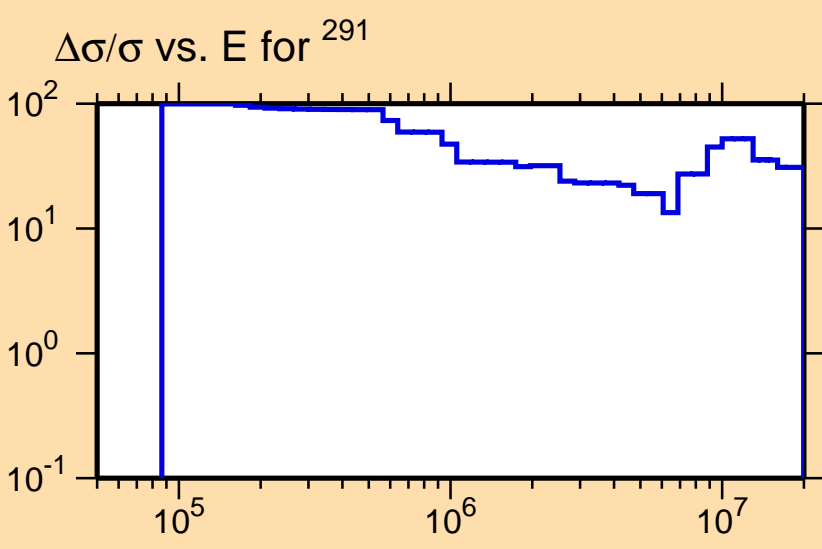




Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

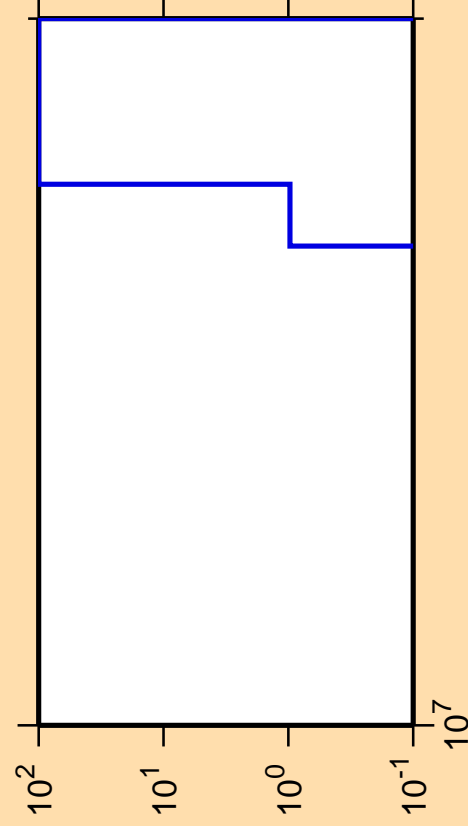
Warning: some uncertainty  
data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$  vs. E for  $^{291}$

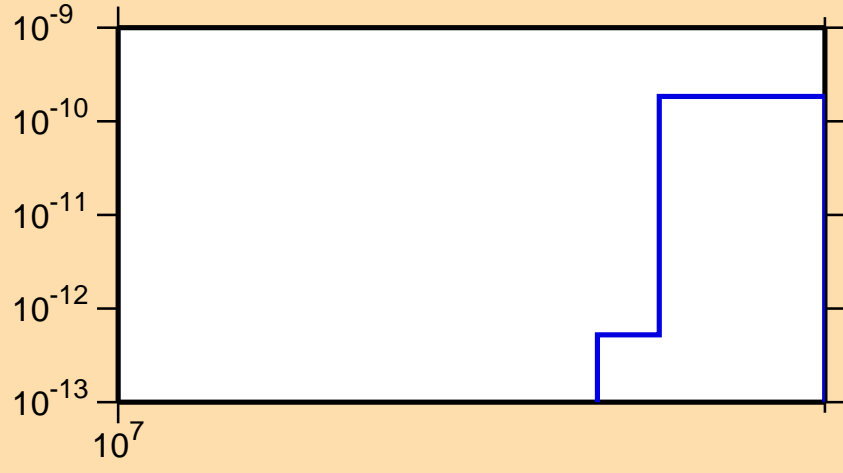


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

$\sigma$  vs. E for  $^{291}$



$10^7$

$10^{-9}$

$10^{-10}$

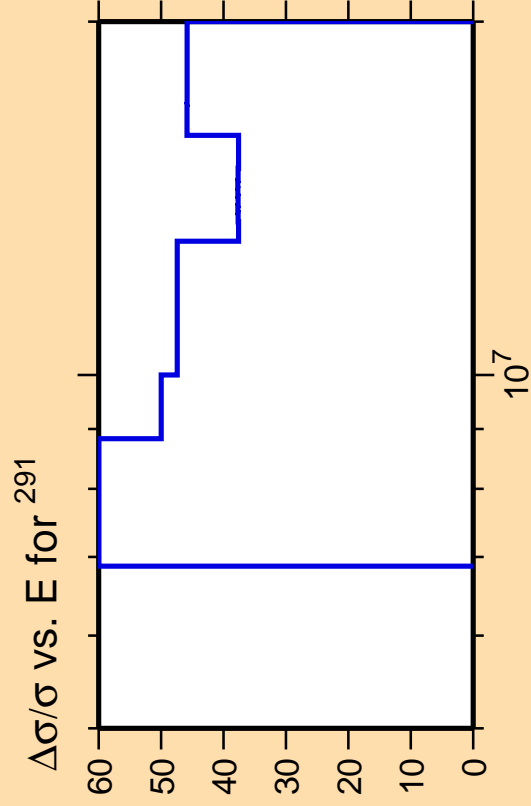
$10^{-11}$

$10^{-12}$

$10^{-13}$

Correlation Matrix

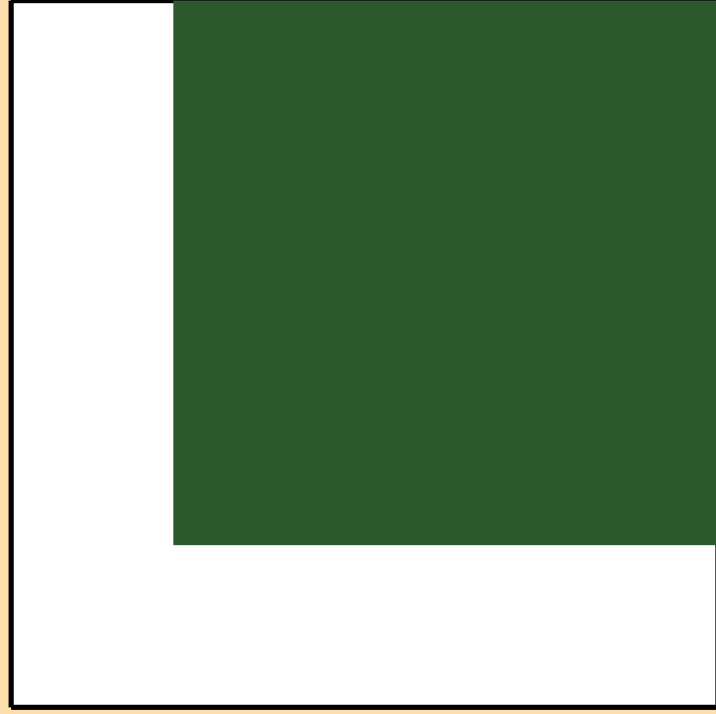
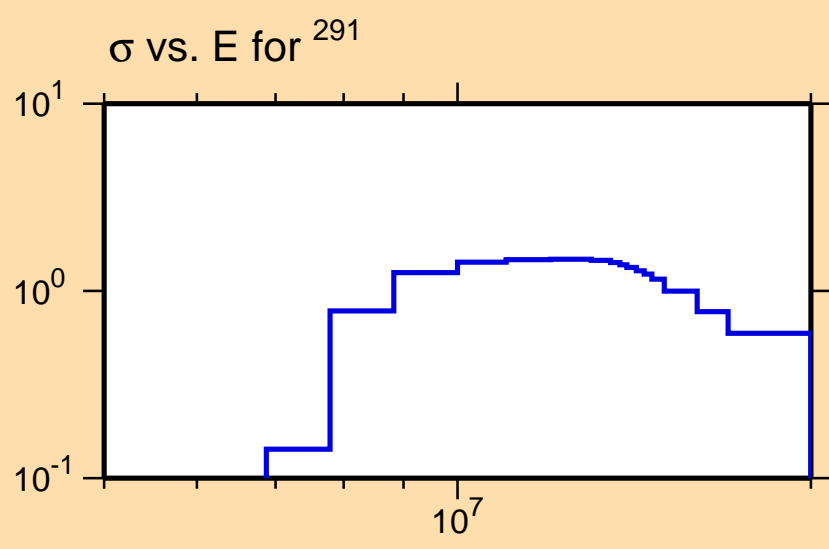




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

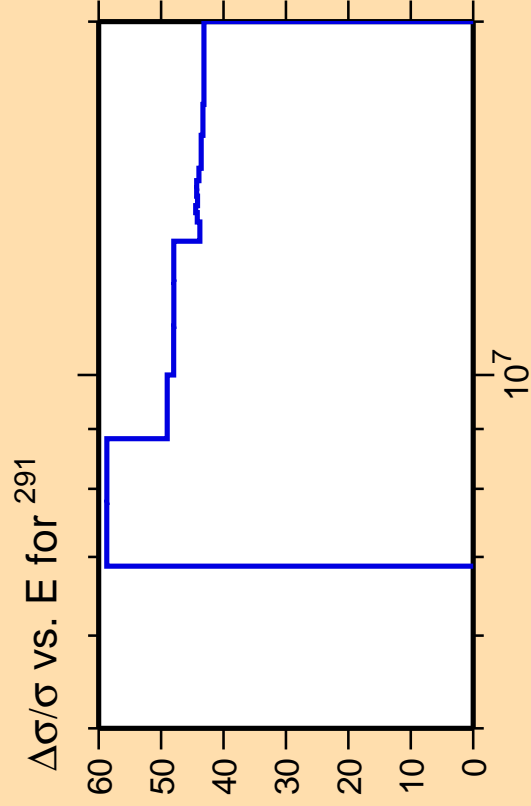
Warning: some uncertainty data were suppressed.



Correlation Matrix



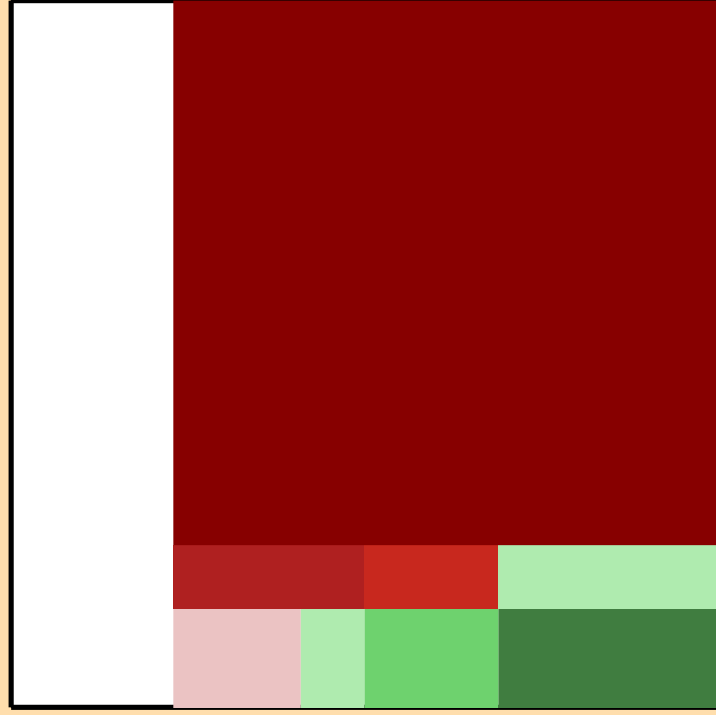
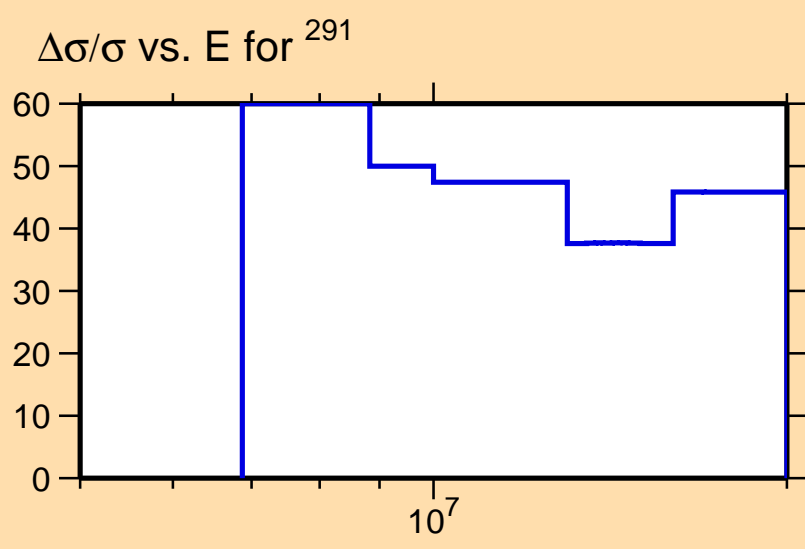




Ordinate scale is %  
relative standard deviation.

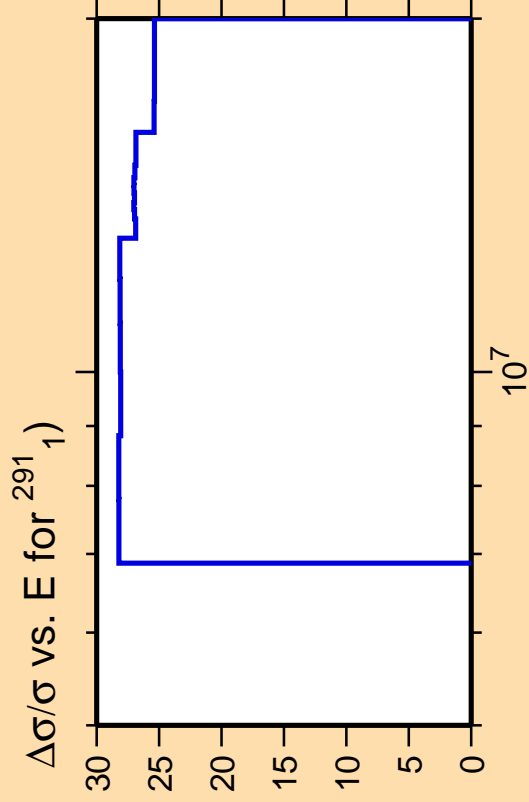
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

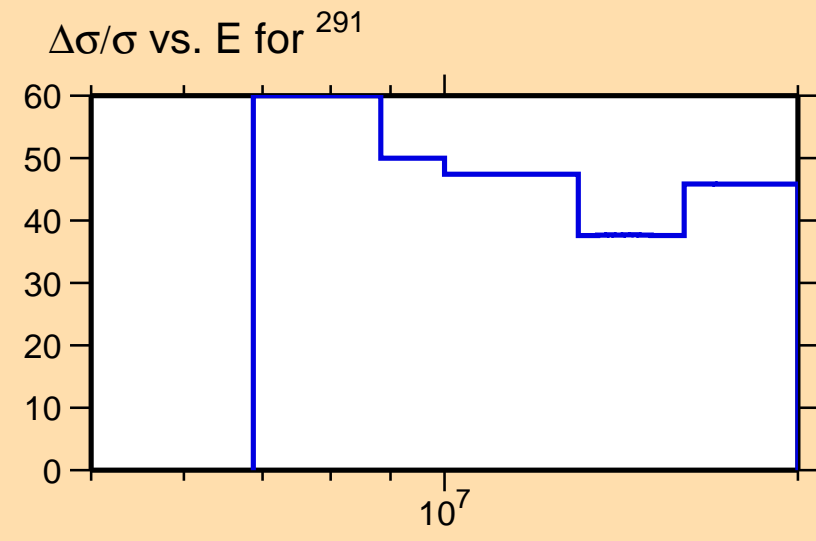




Ordinate scale is %  
relative standard deviation.

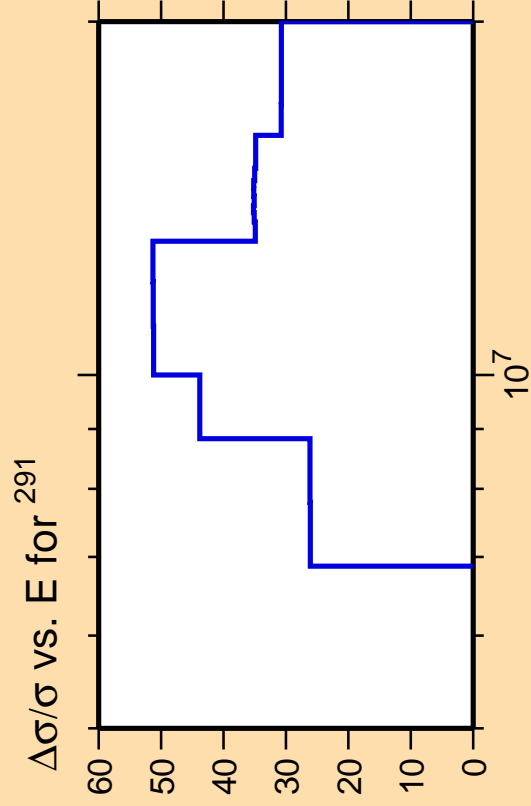
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

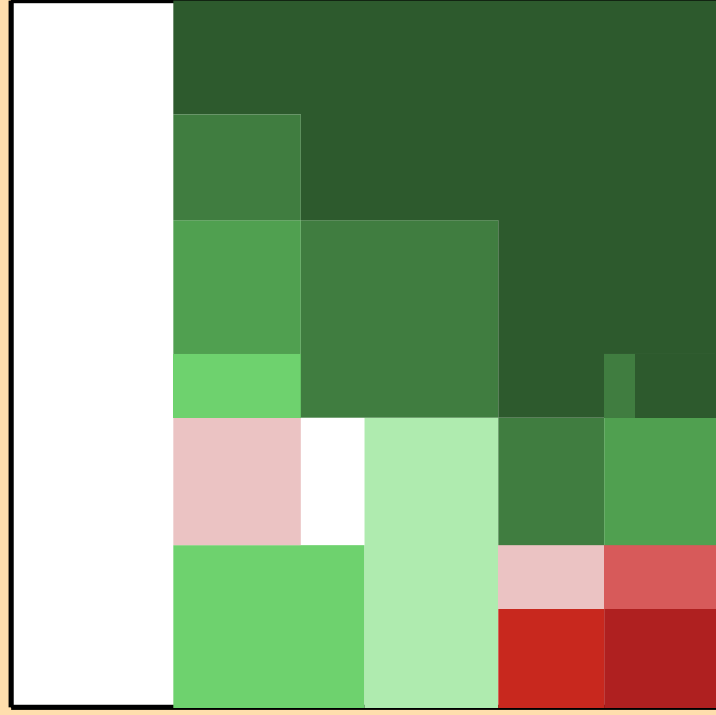
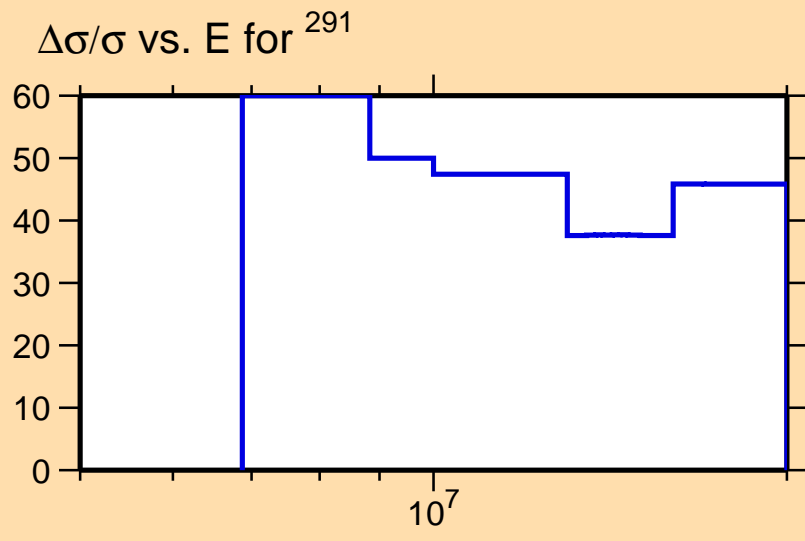




Ordinate scale is %  
relative standard deviation.

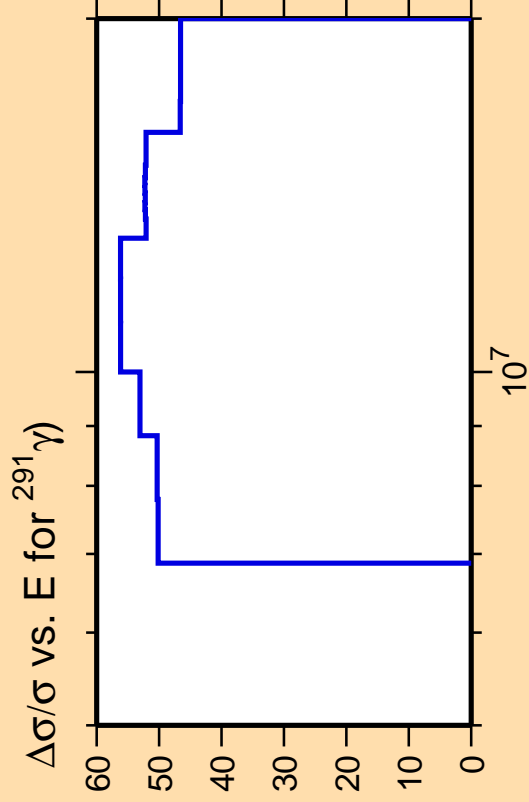
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

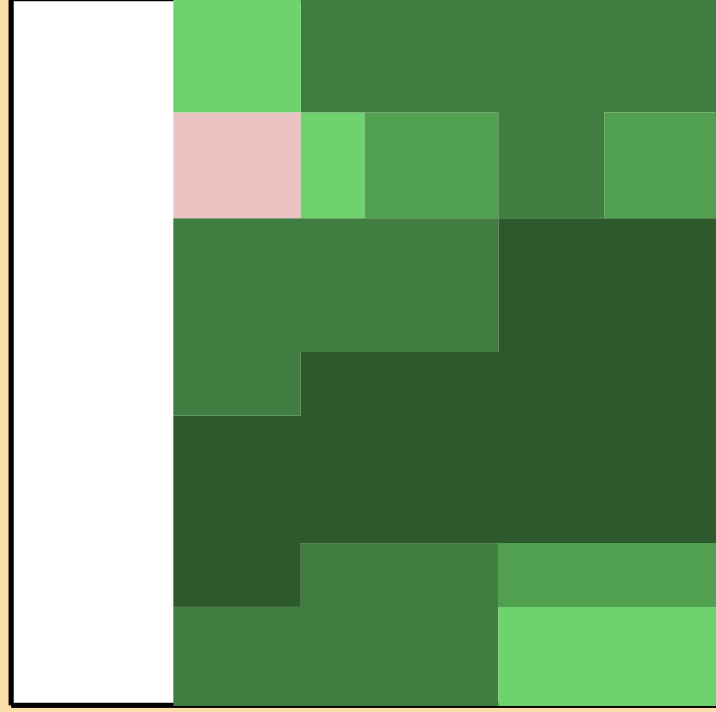
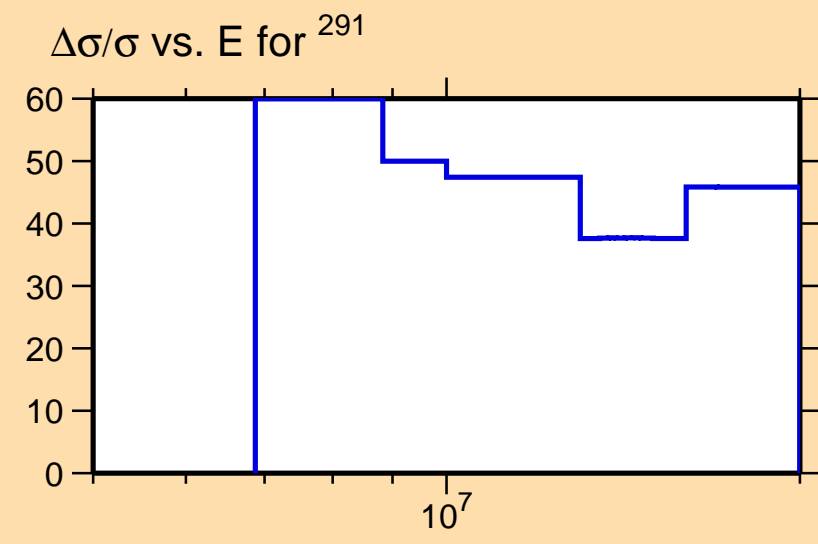




Ordinate scale is %  
relative standard deviation.

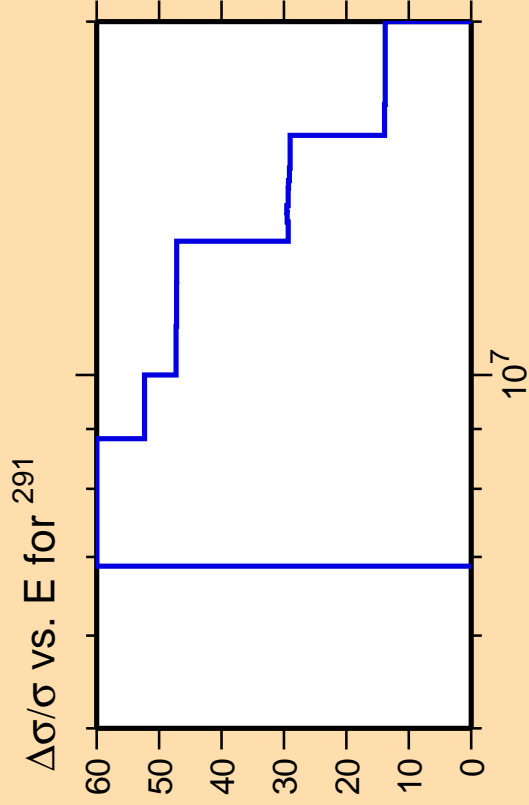
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

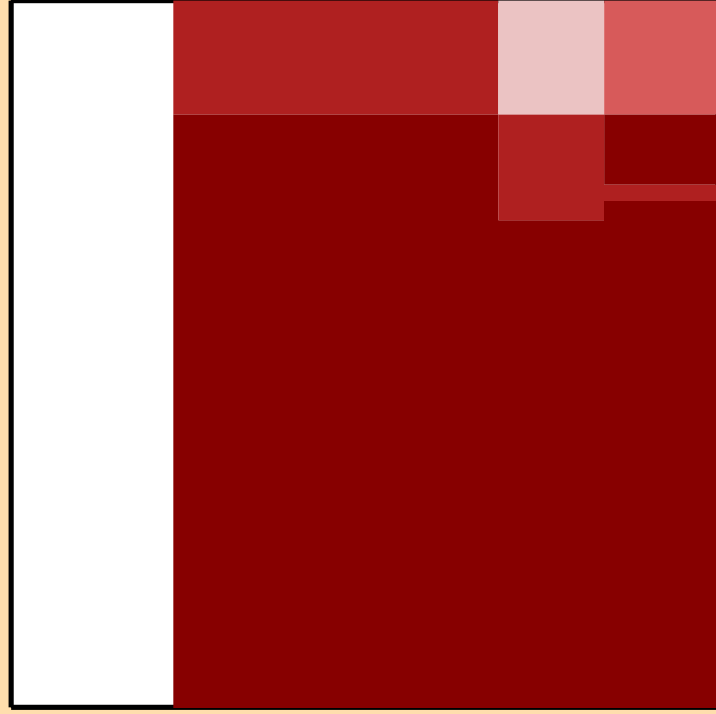
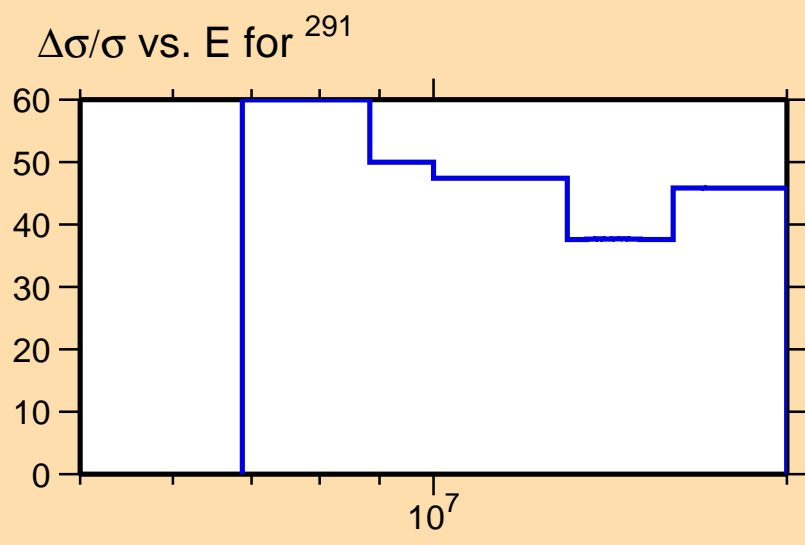




Ordinate scale is %  
relative standard deviation.

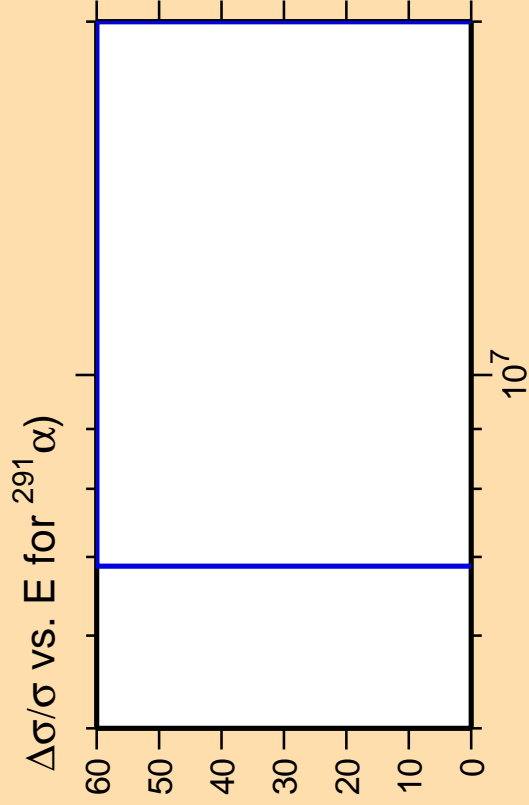
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



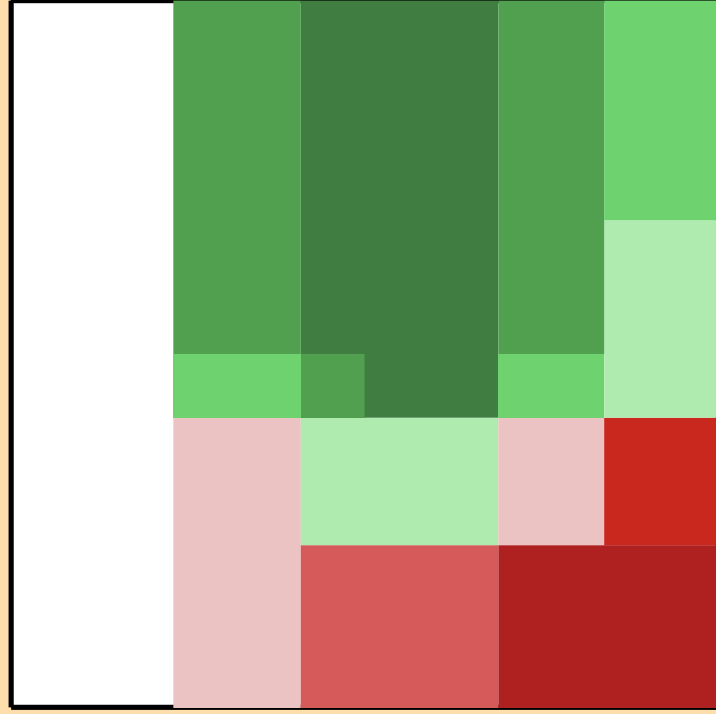
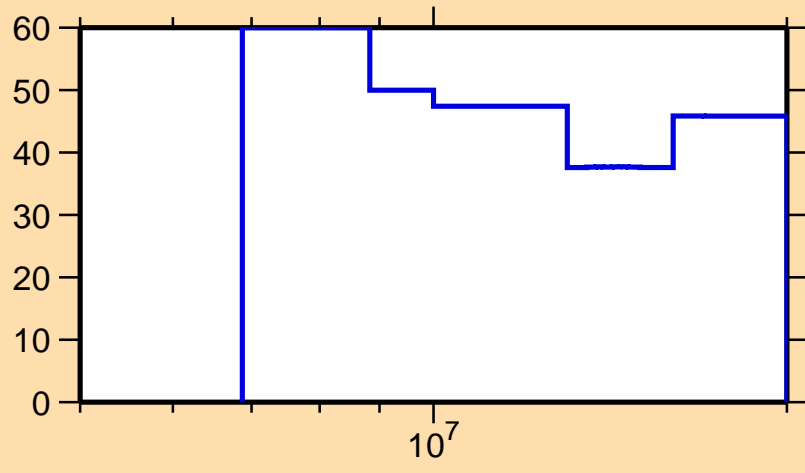


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.

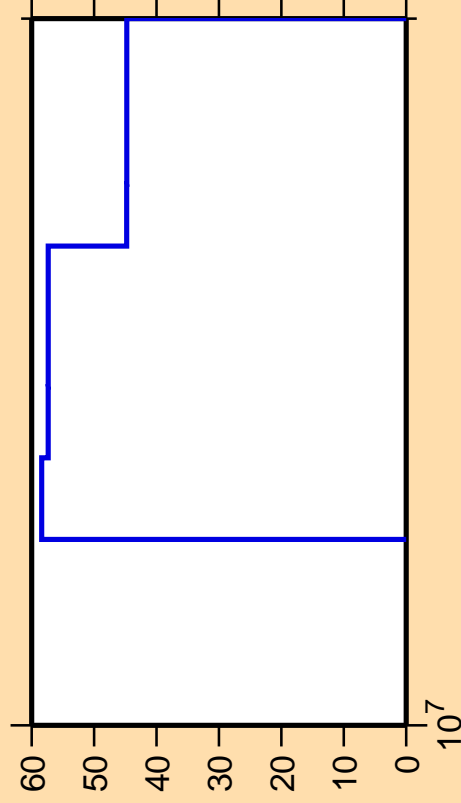
$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



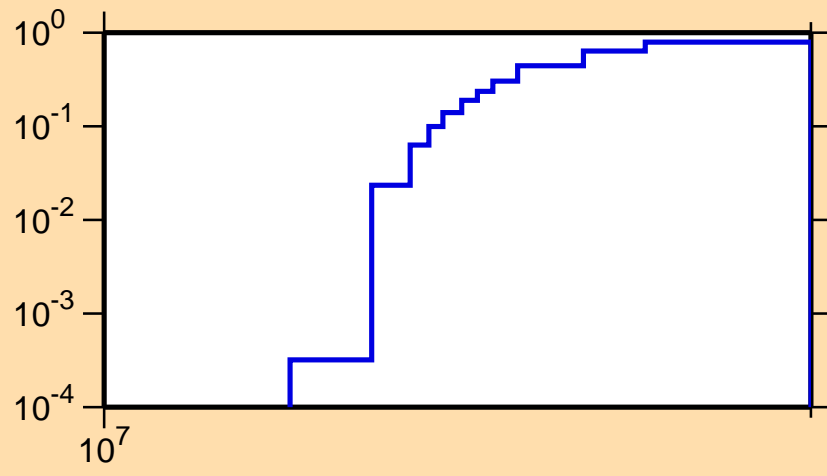
$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

$\sigma$  vs. E for <sup>291</sup>



10<sup>7</sup>

10<sup>0</sup>

10<sup>-1</sup>

10<sup>-2</sup>

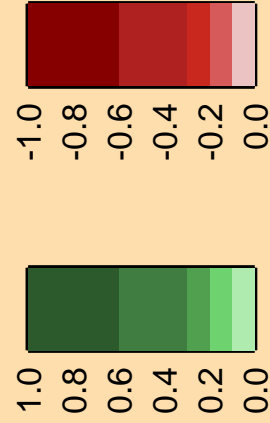
10<sup>-3</sup>

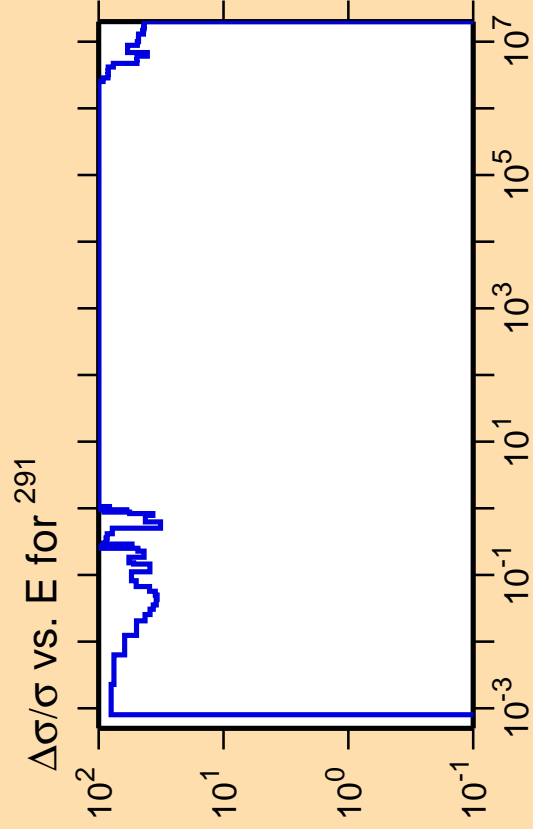
10<sup>-4</sup>

10<sup>7</sup>

10<sup>8</sup>

Correlation Matrix

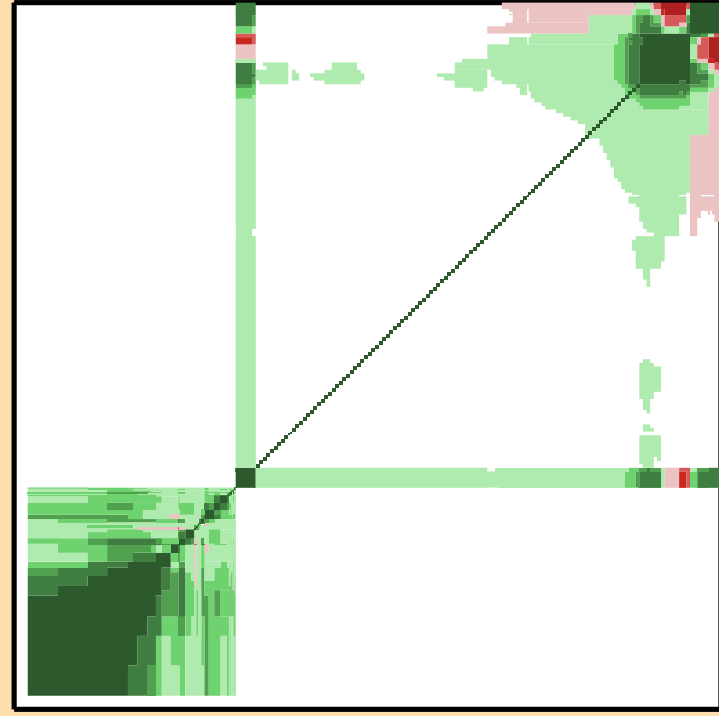




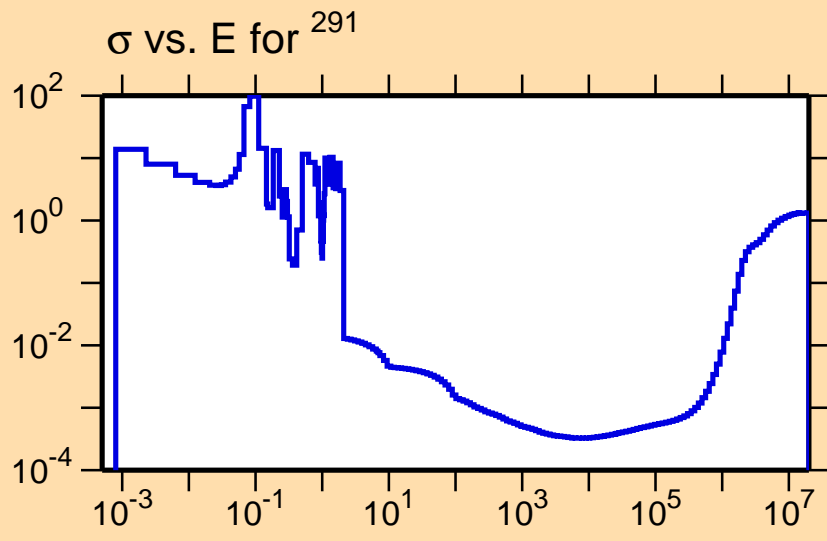
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

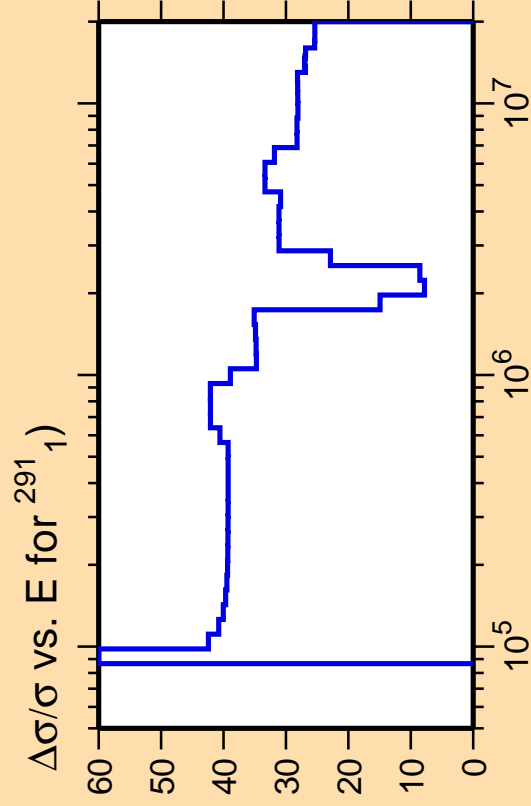
Warning: some uncertainty data were suppressed.



Correlation Matrix





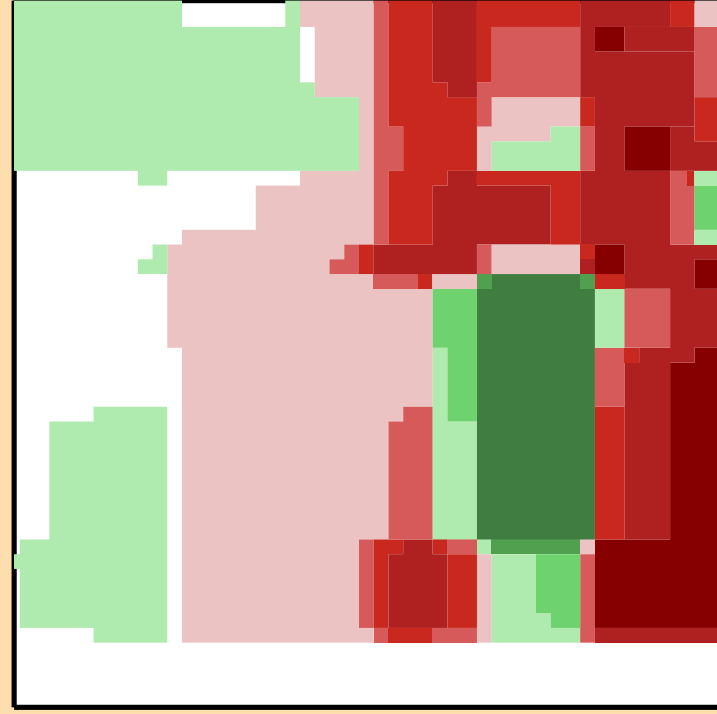
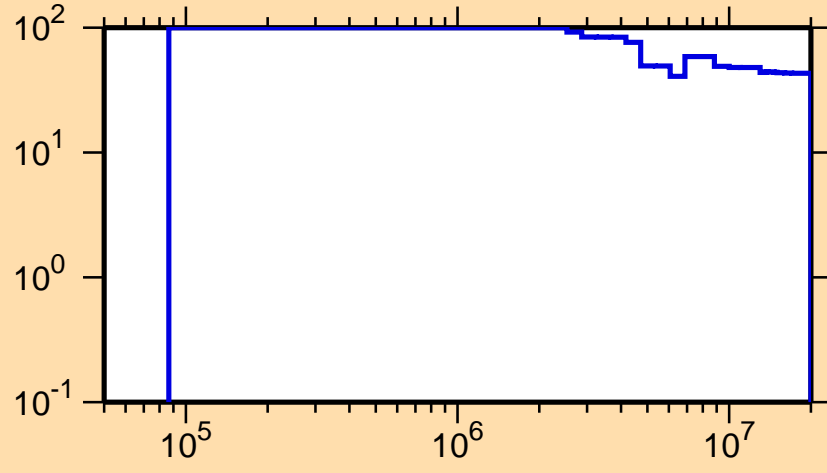


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

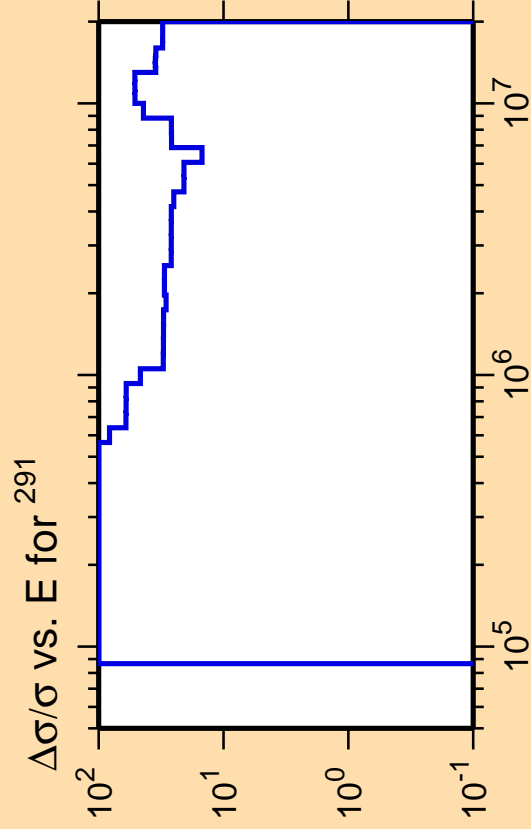
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix

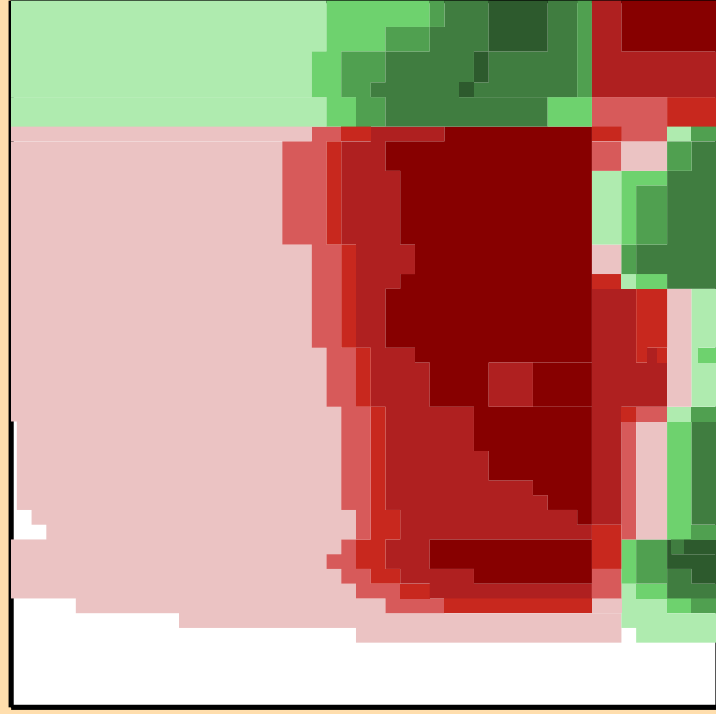
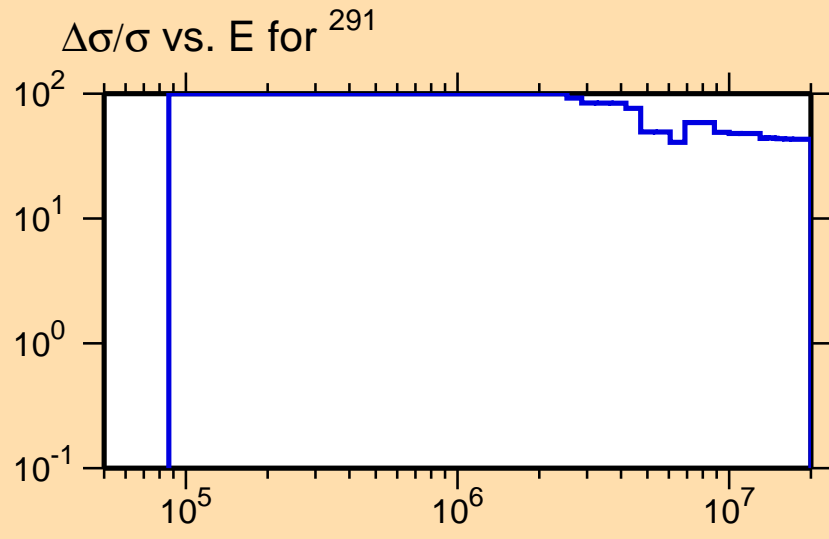




Ordinate scale is %  
relative standard deviation.

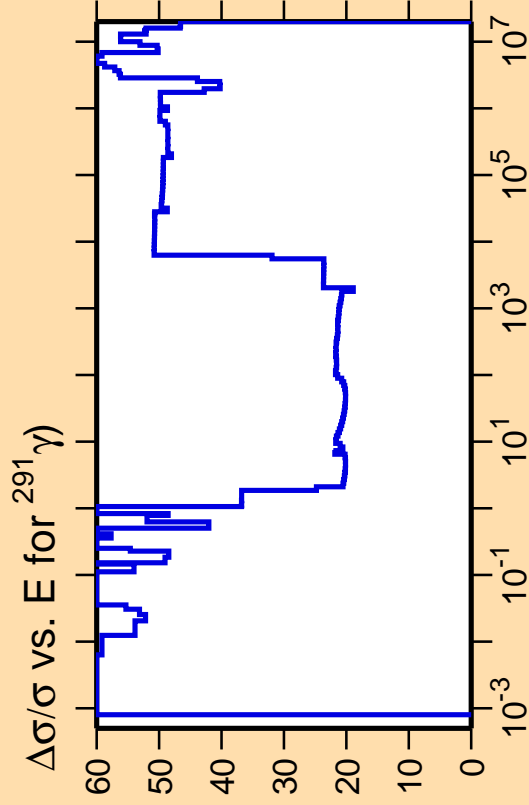
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



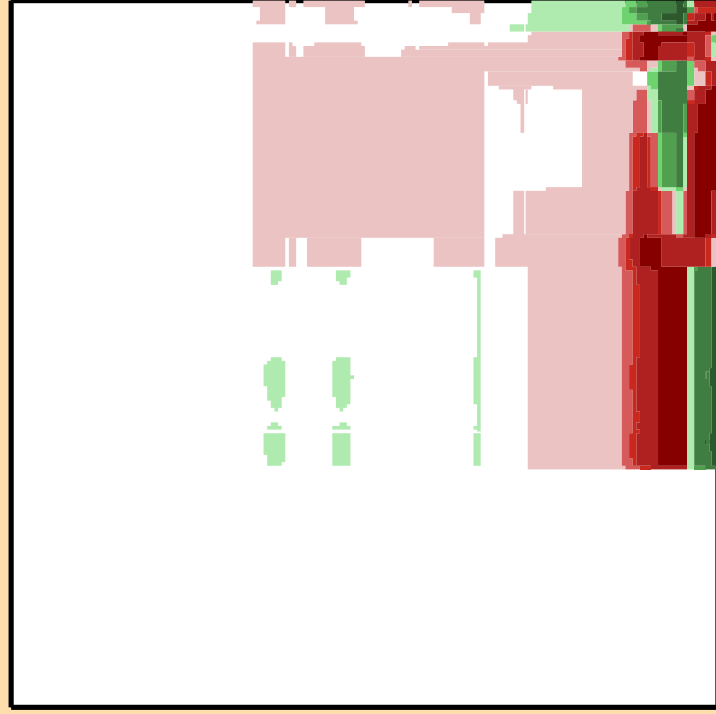
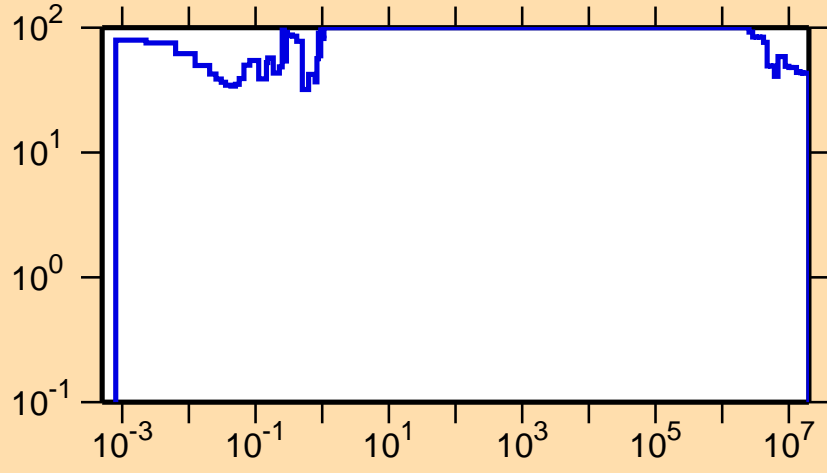


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

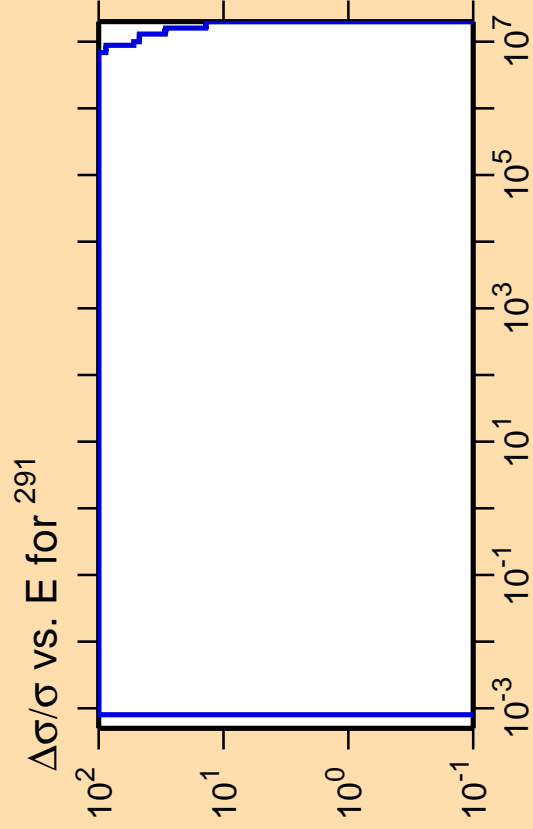
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix



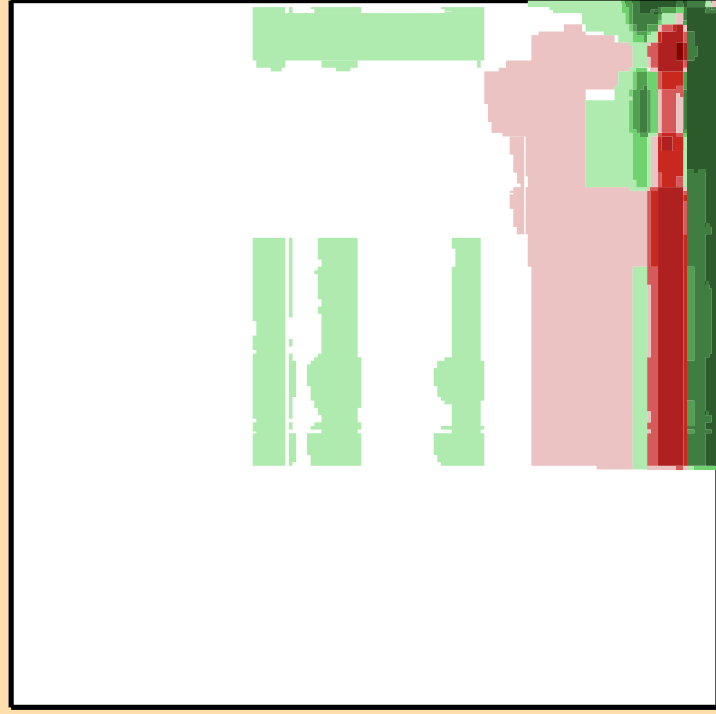
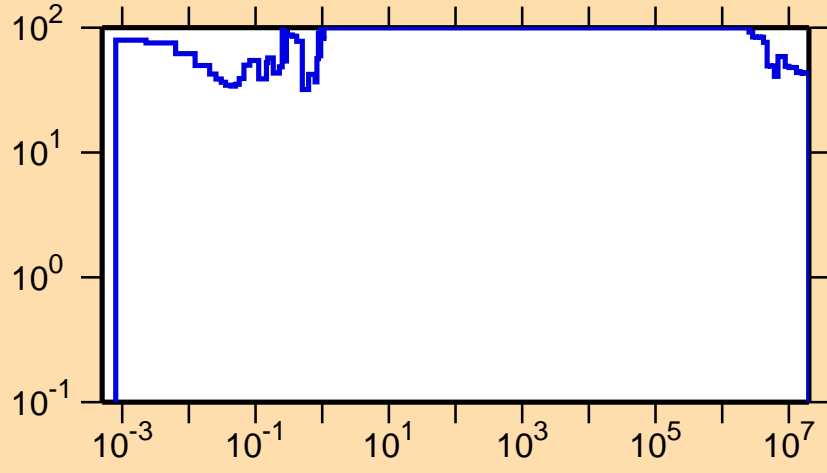


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

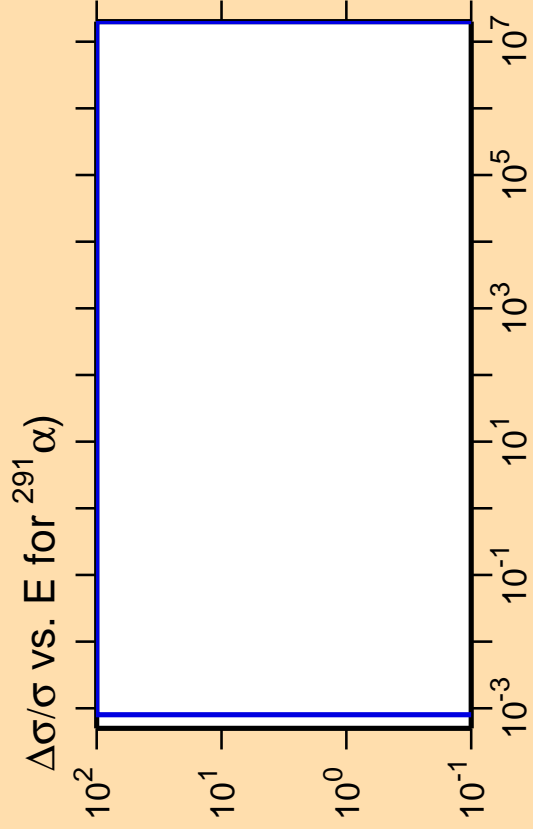
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for <sup>291</sup>



Correlation Matrix



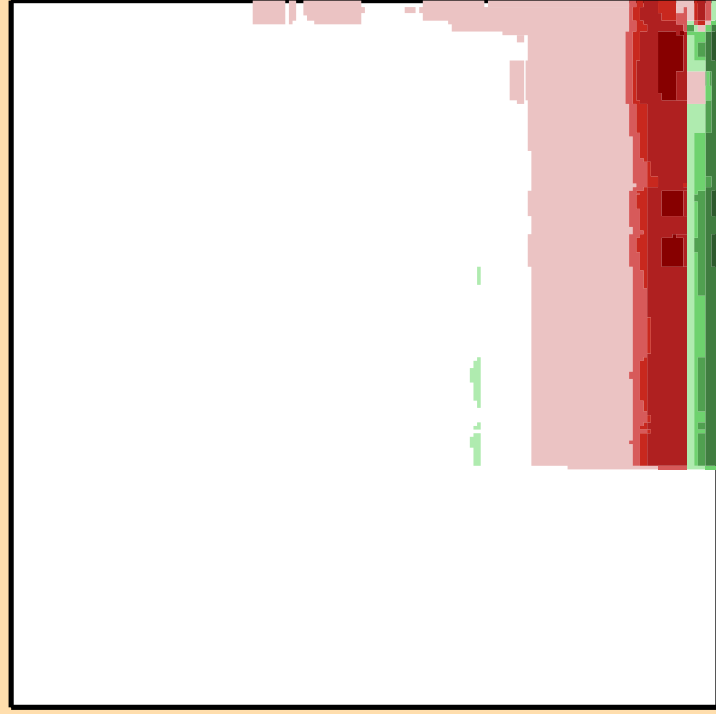
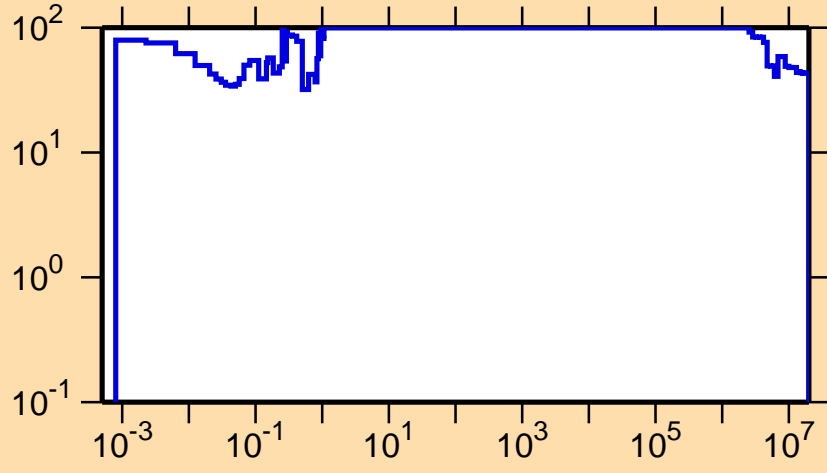


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

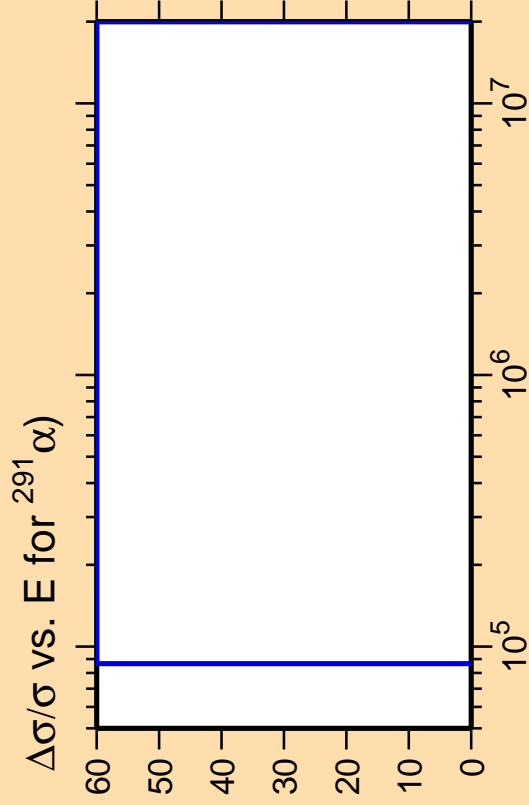
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix

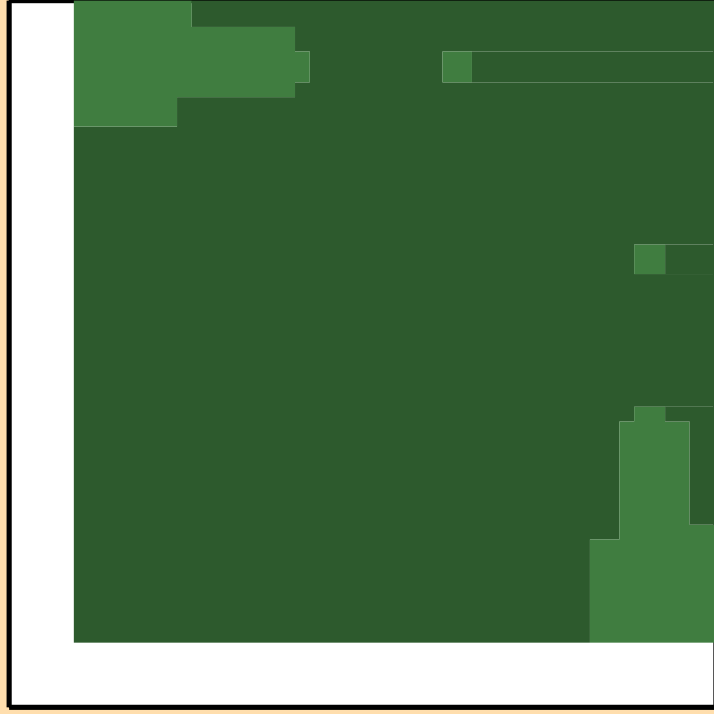
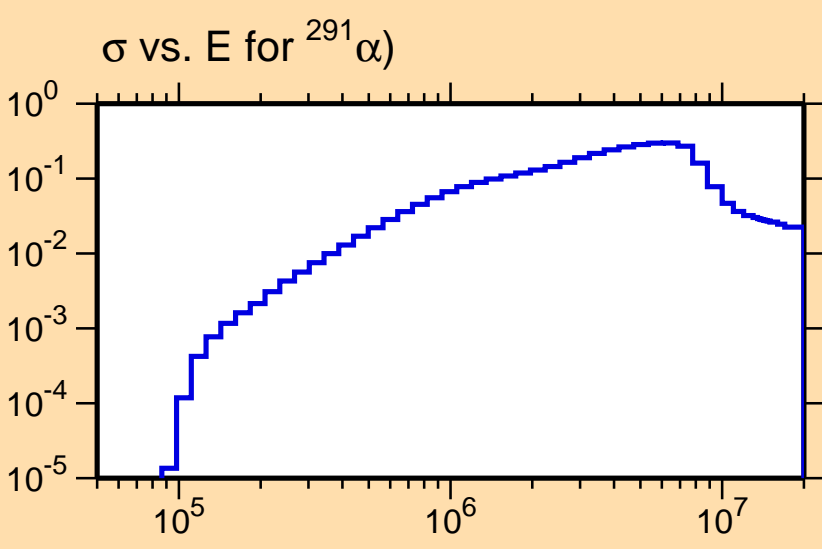




Ordinate scales are % relative standard deviation and barns.

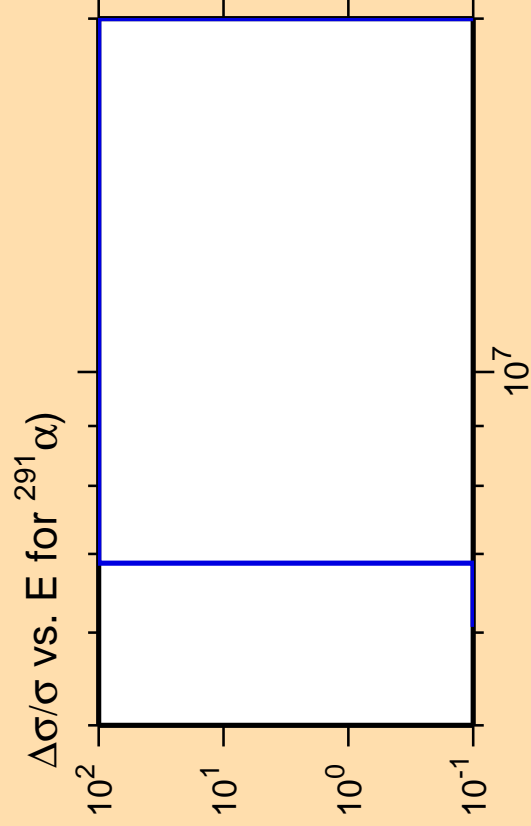
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

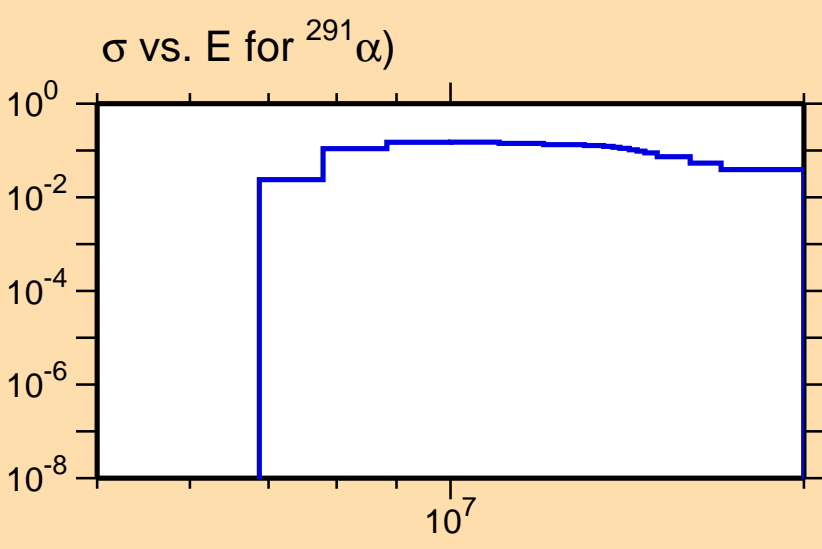




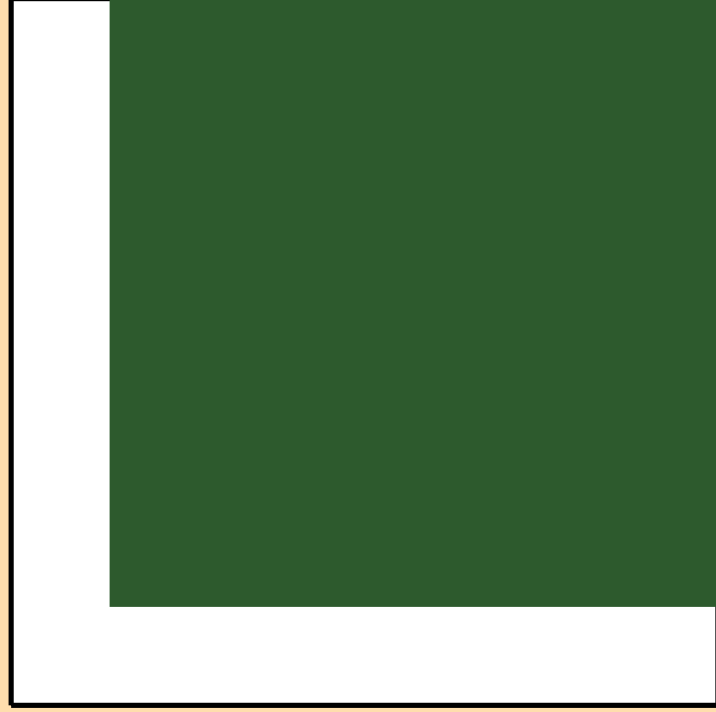
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

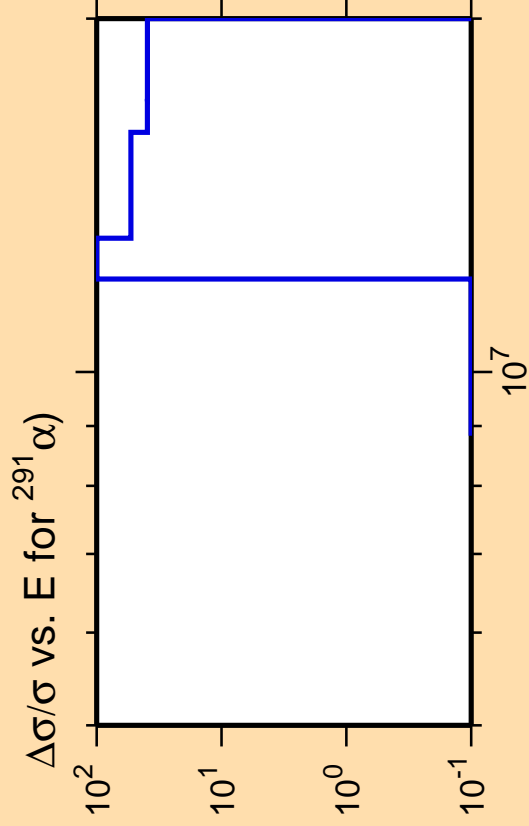


$\sigma$  vs.  $E$  for  $^{291}\alpha$



Correlation Matrix

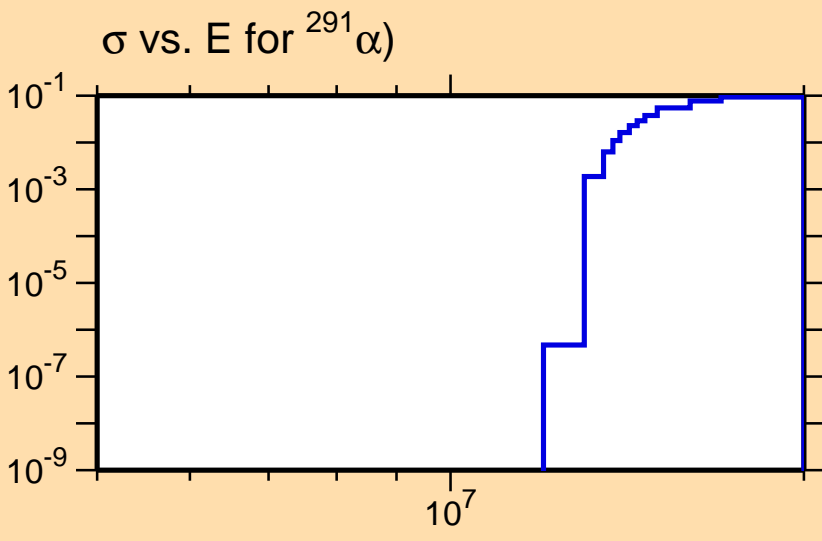




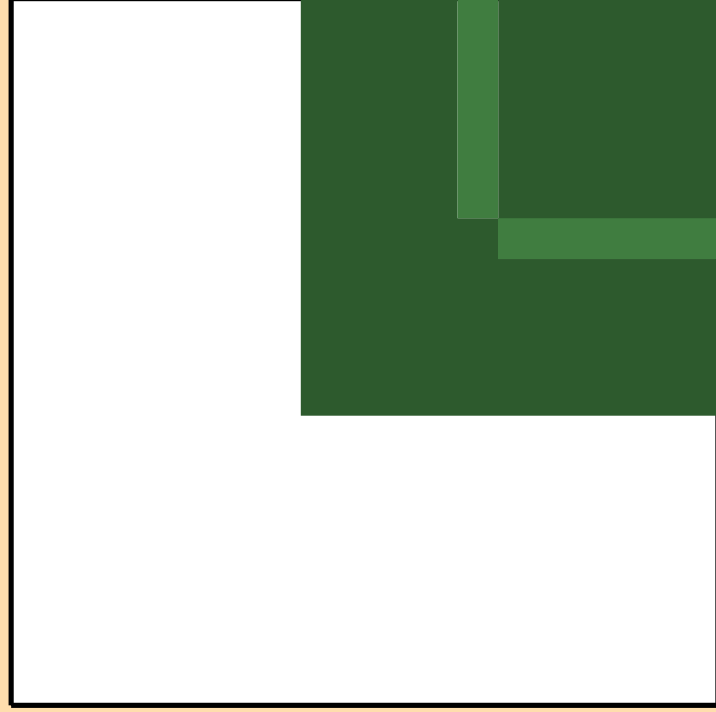
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



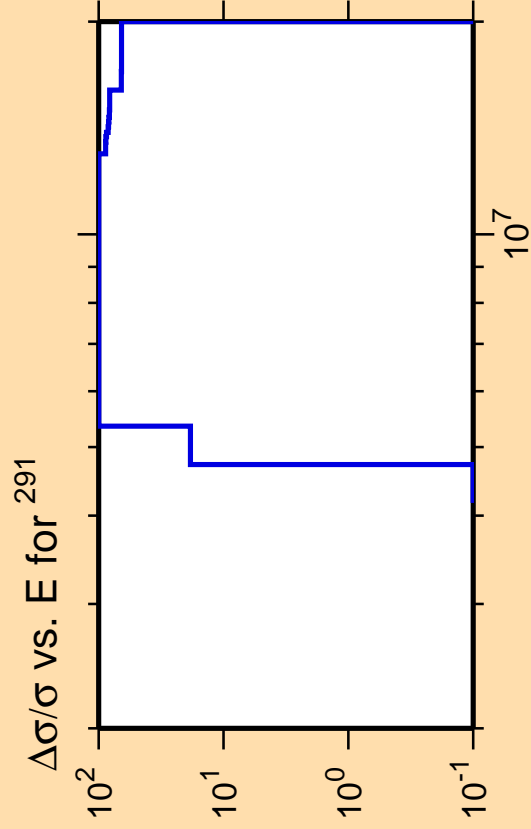
$\sigma$  vs.  $E$  for  $^{291}\alpha$



Correlation Matrix



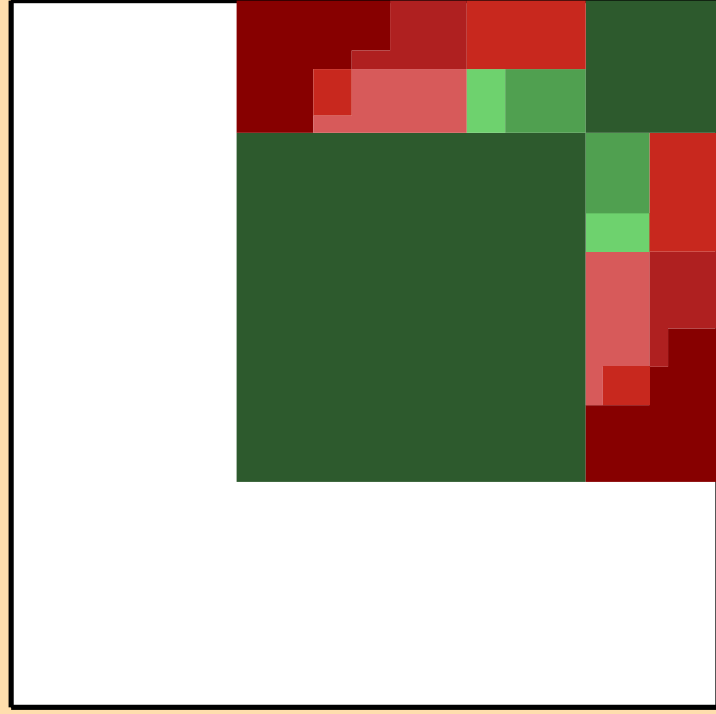
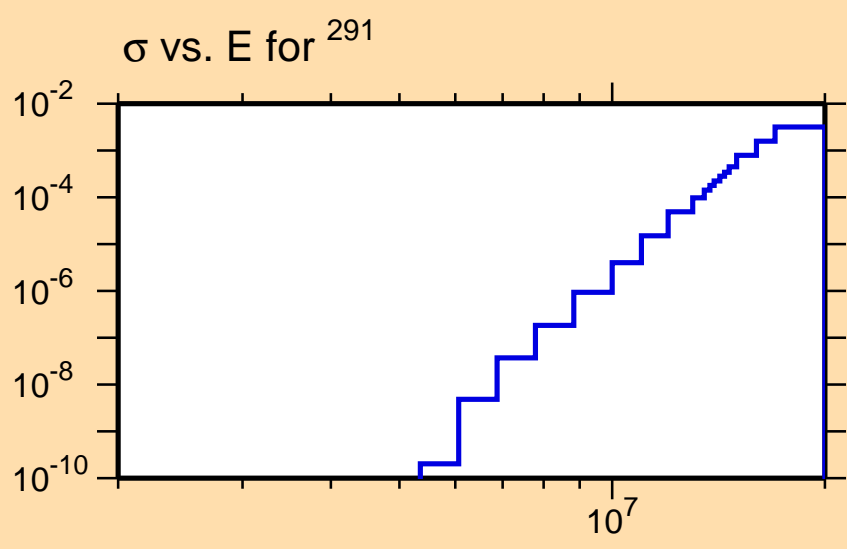




Ordinate scales are % relative standard deviation and barns.

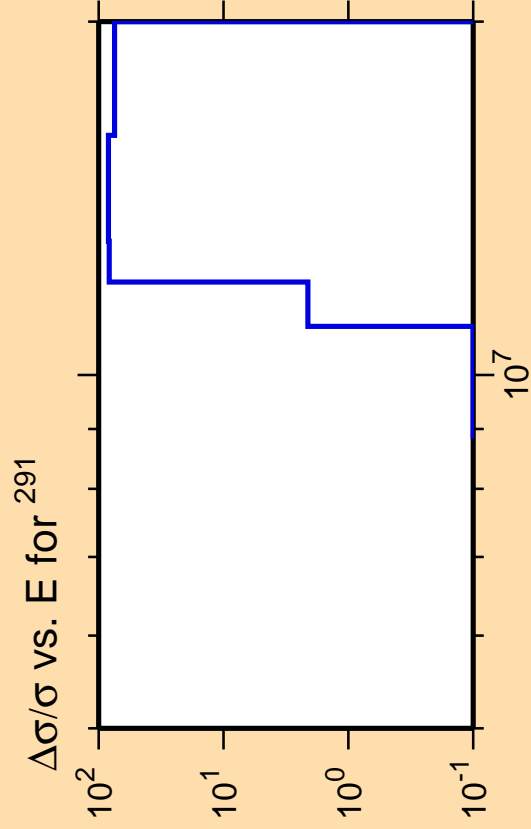
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

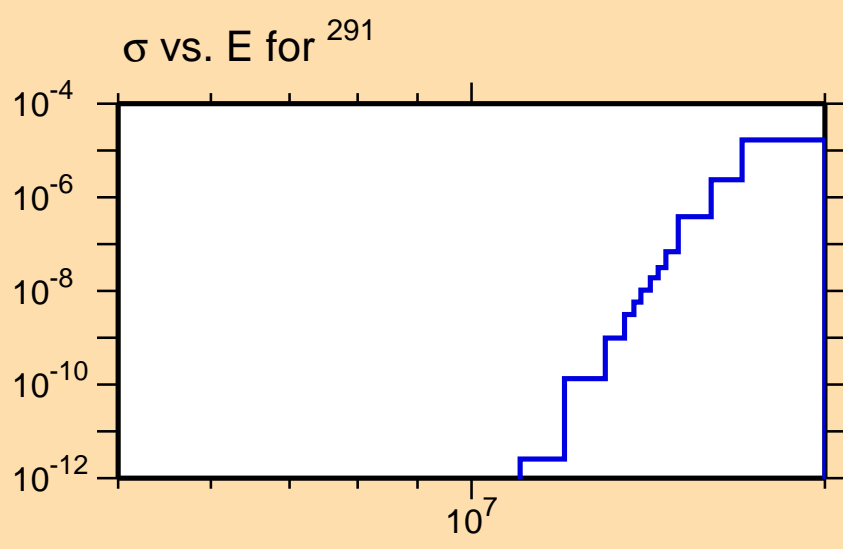




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

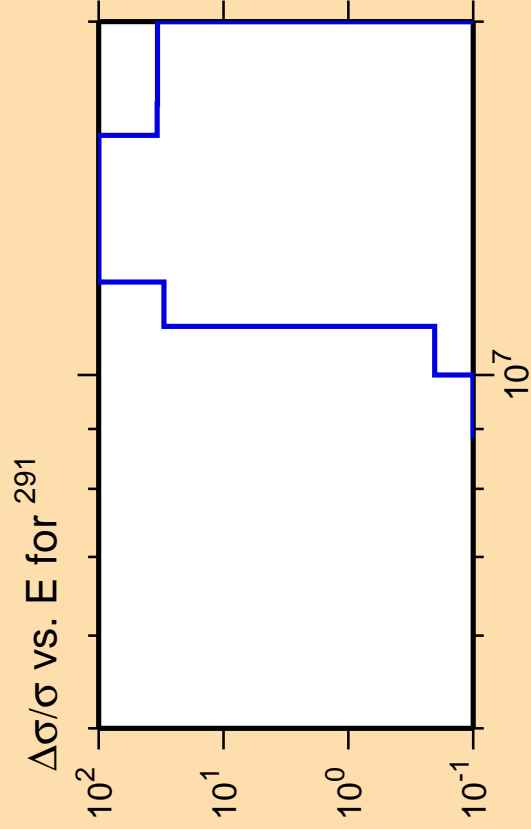
Warning: some uncertainty data were suppressed.



Correlation Matrix



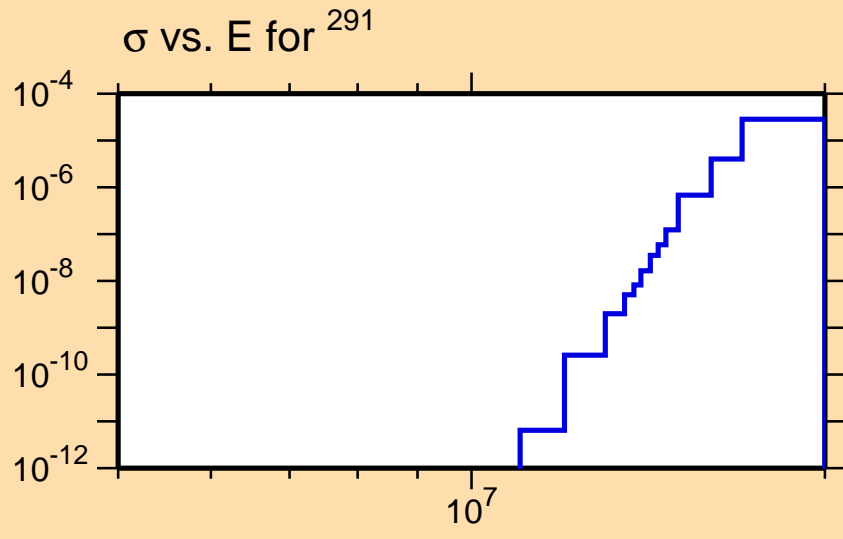
-1.0  
-0.8  
-0.6  
-0.4  
-0.2  
0.0



Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

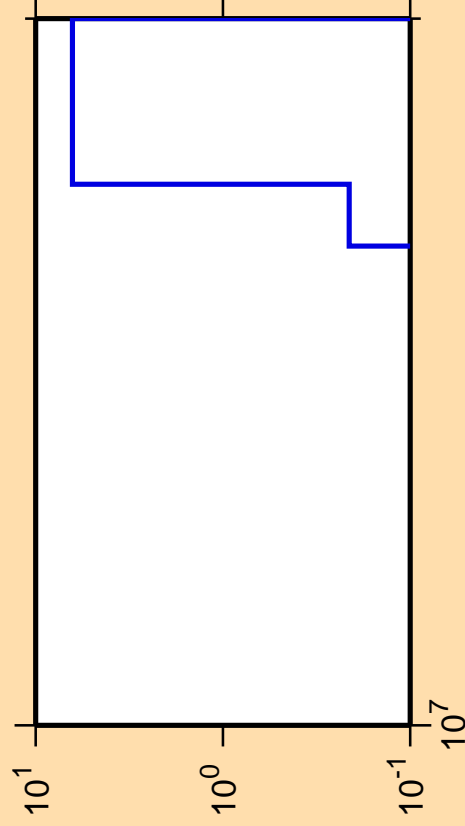
Warning: some uncertainty data were suppressed.



Correlation Matrix



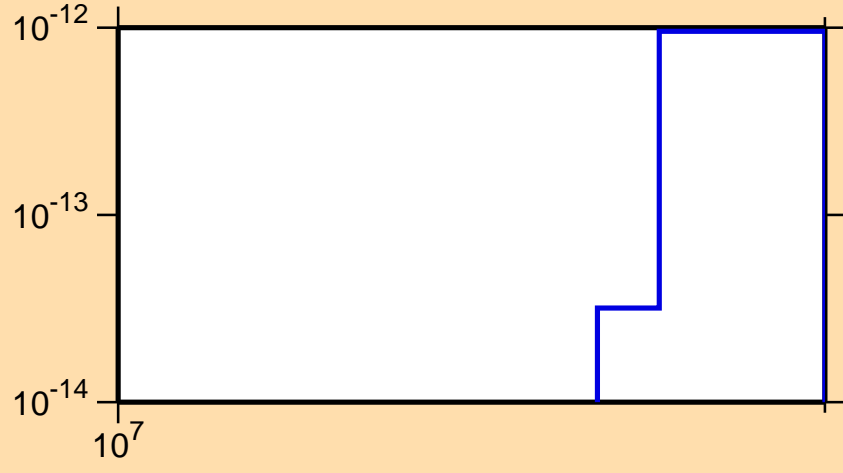
$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

$\sigma$  vs. E for  $^{291}$



$\sigma$  vs. E for  $^{291}$

$10^7$

$10^{-14}$

$10^{-13}$

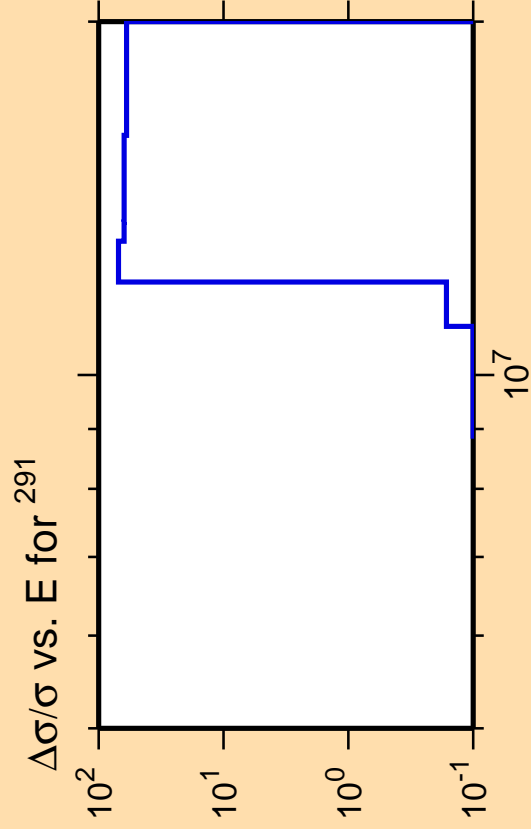
$10^{-12}$

Correlation Matrix



1.0  
0.8  
0.6  
0.4  
0.2  
0.0

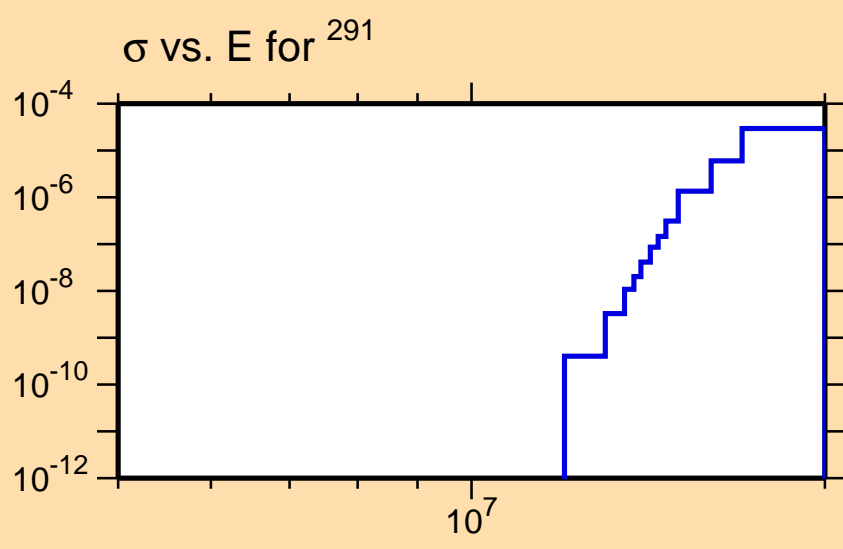
-1.0  
-0.8  
-0.6  
-0.4  
-0.2  
0.0



Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

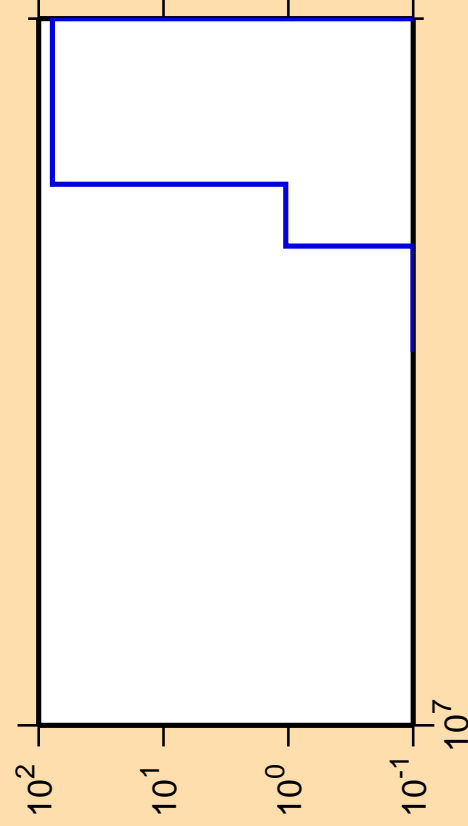
Warning: some uncertainty data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$  vs. E for  $^{291}$

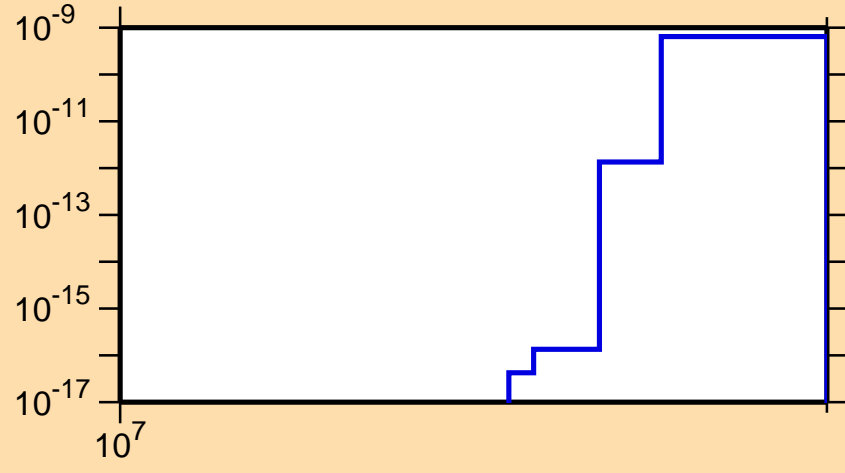


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

$\sigma$  vs. E for  $^{291}$



$10^7$

$10^{-17}$

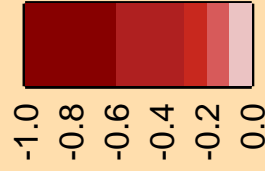
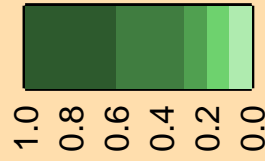
$10^{-15}$

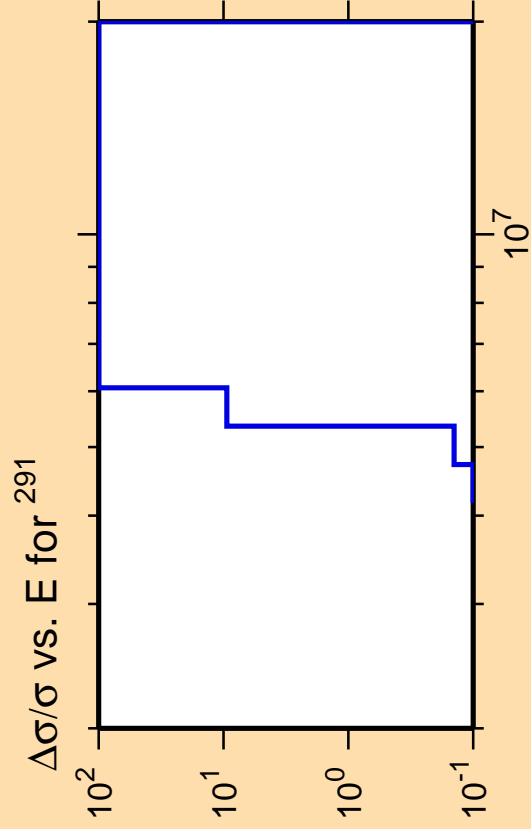
$10^{-13}$

$10^{-11}$

$10^{-9}$

Correlation Matrix

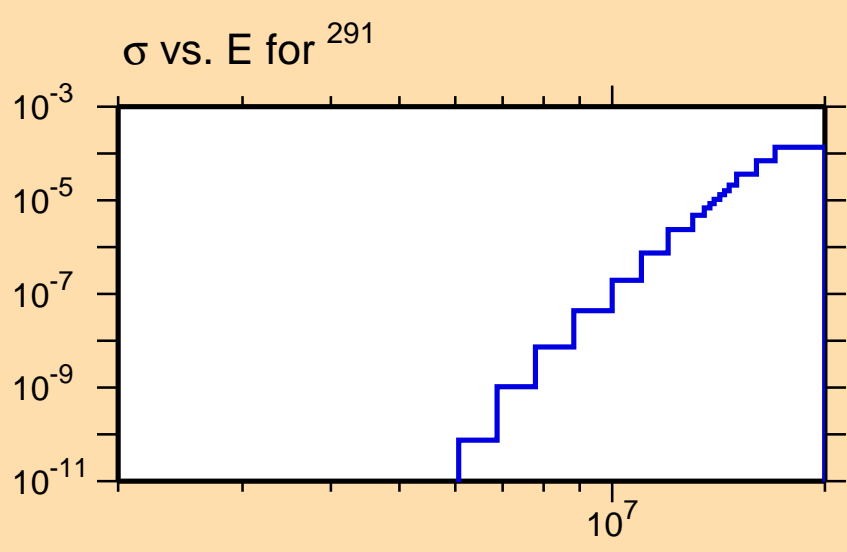




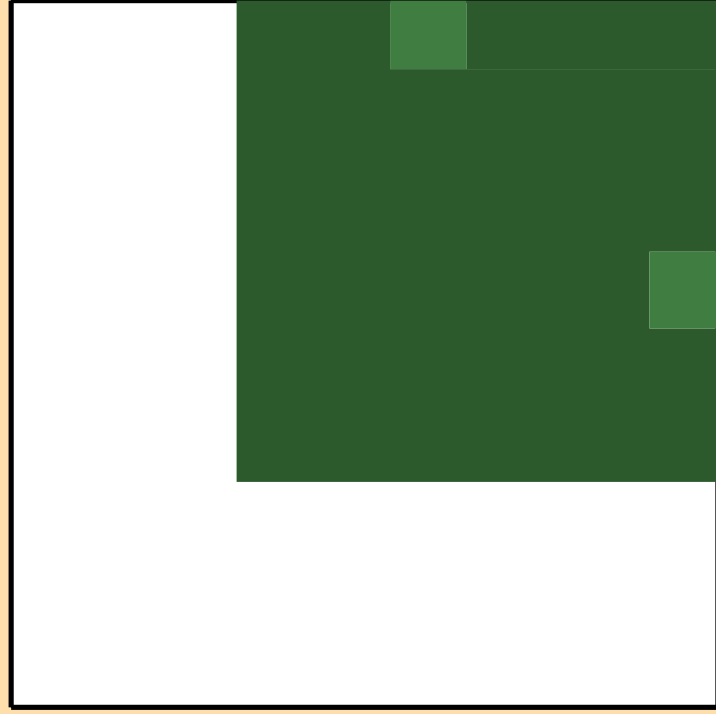
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



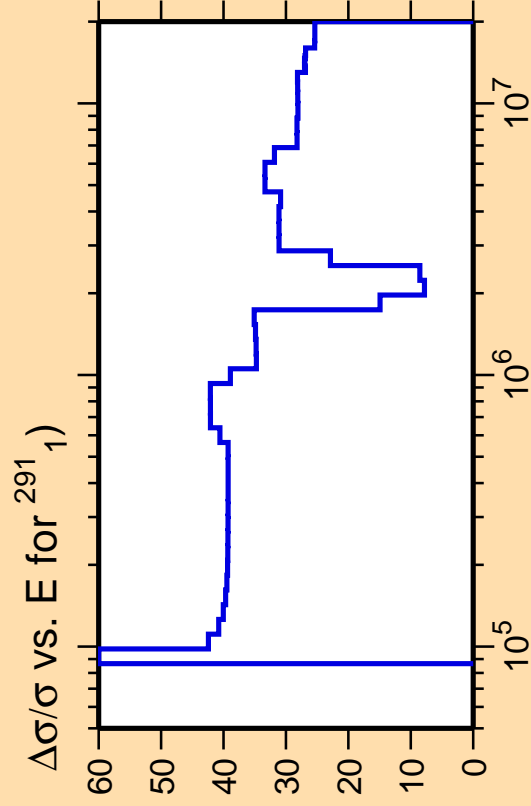
$\sigma$  vs.  $E$  for  $^{291}$



Correlation Matrix



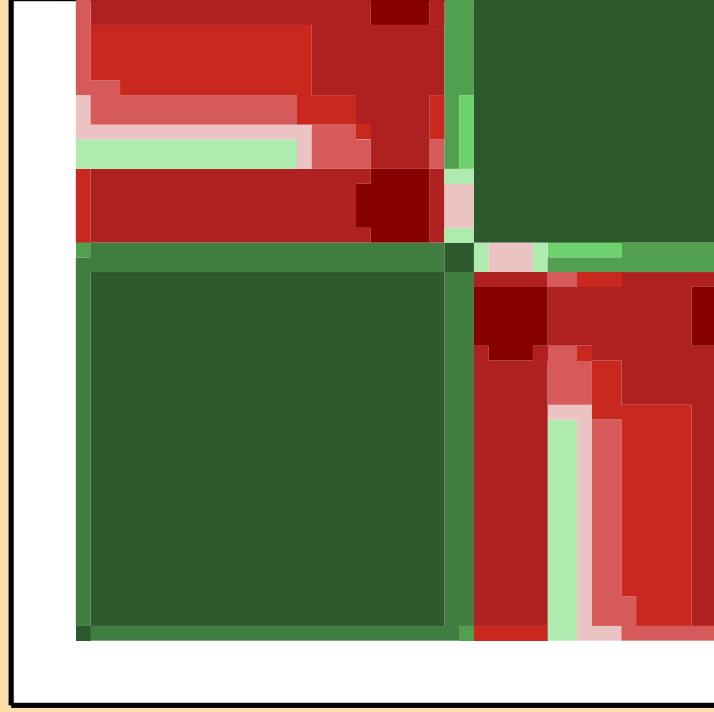
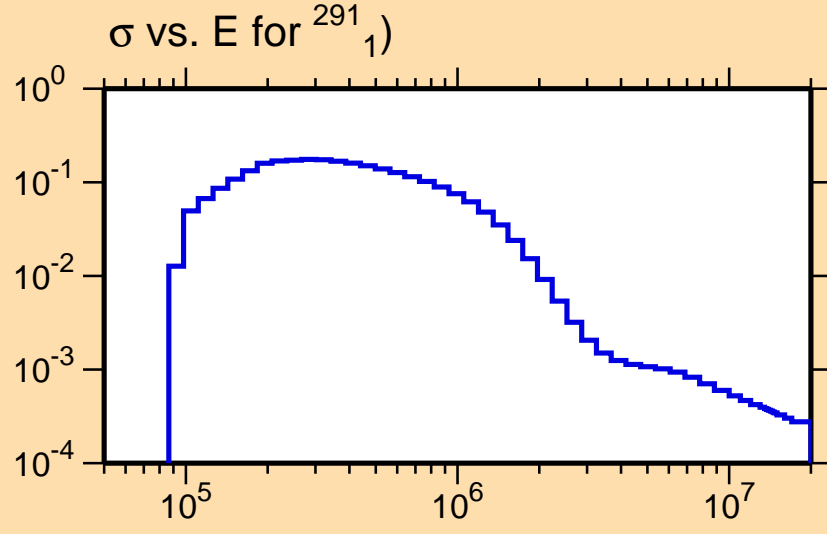
-1.0  
-0.8  
-0.6  
-0.4  
-0.2  
0.0



Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

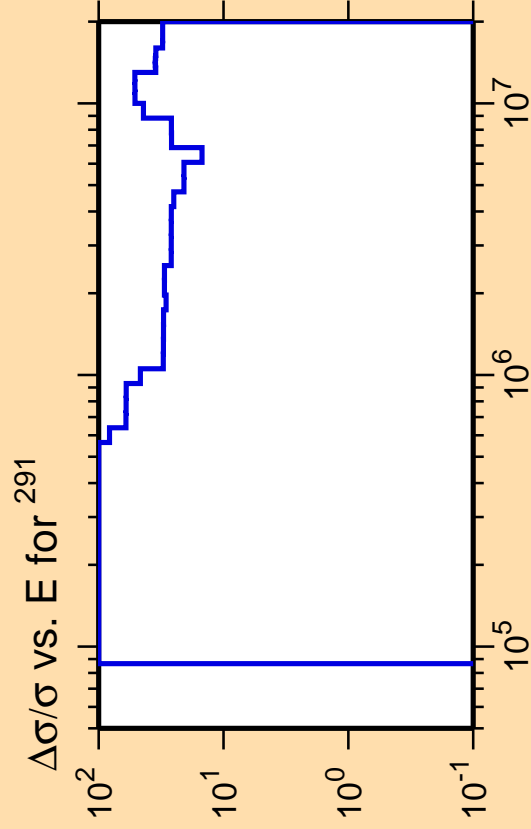
Warning: some uncertainty data were suppressed.



Correlation Matrix



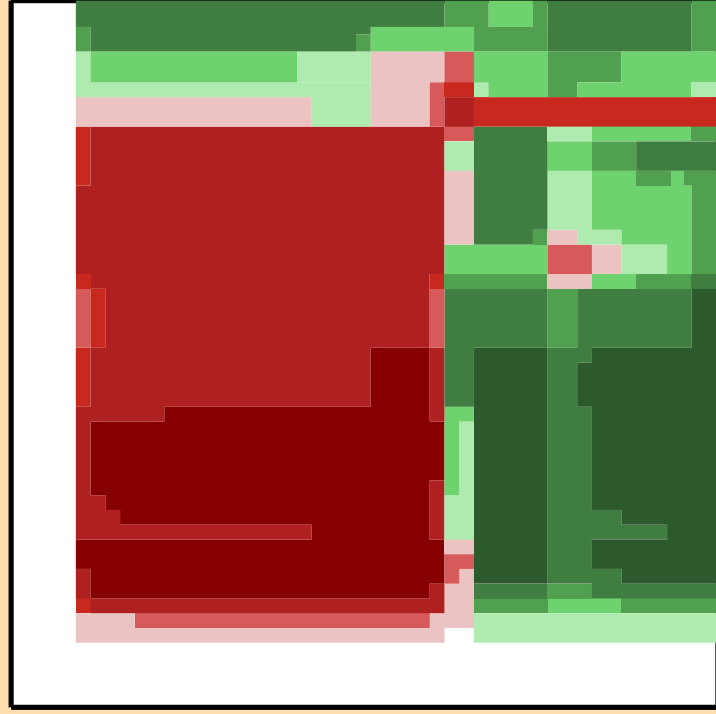
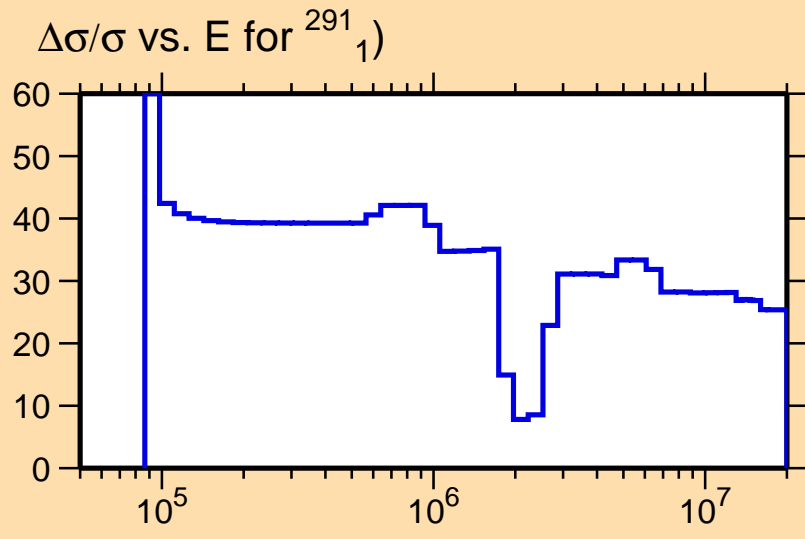




Ordinate scale is %  
relative standard deviation.

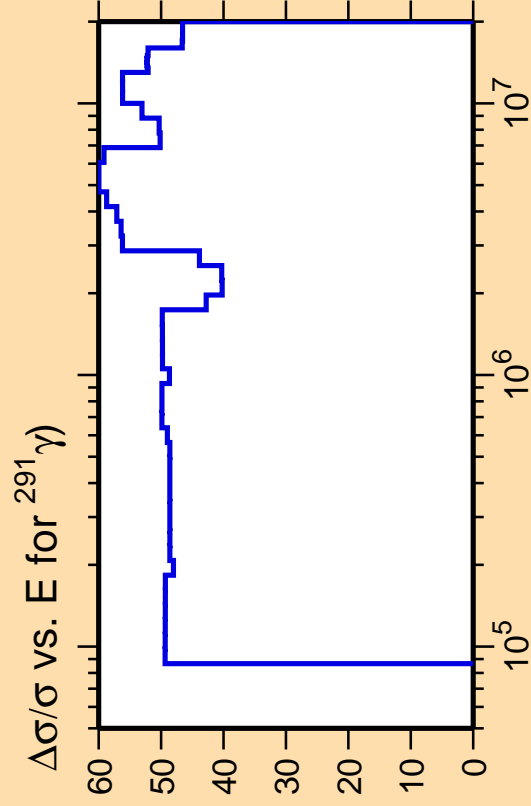
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix

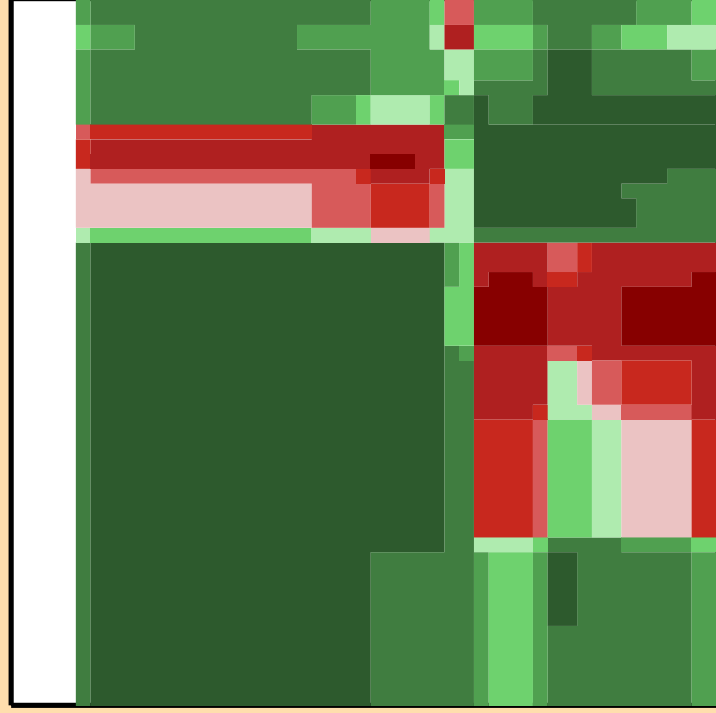
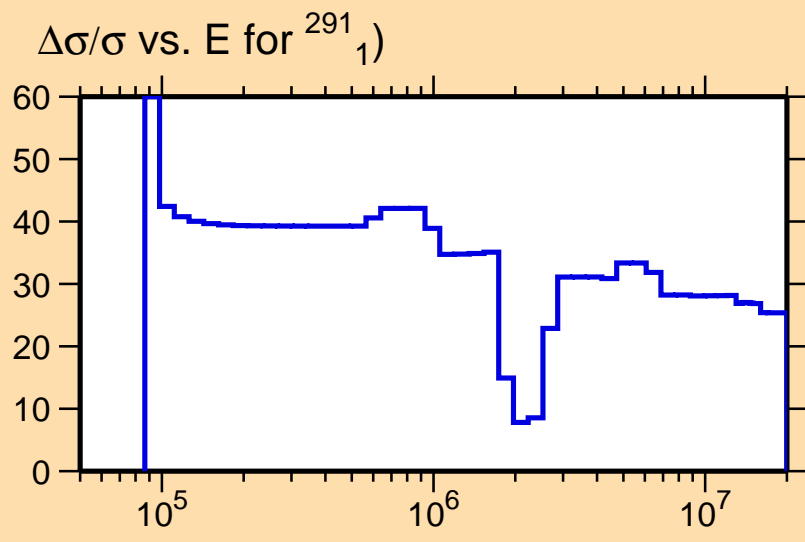




Ordinate scale is %  
relative standard deviation.

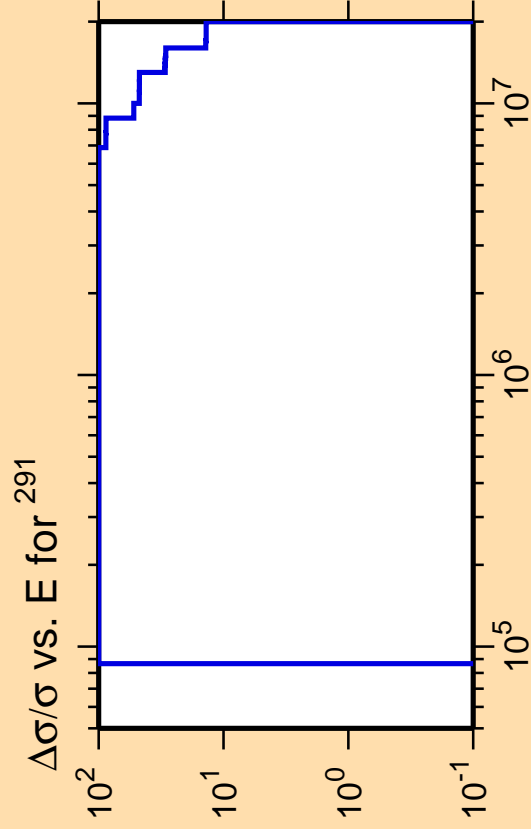
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



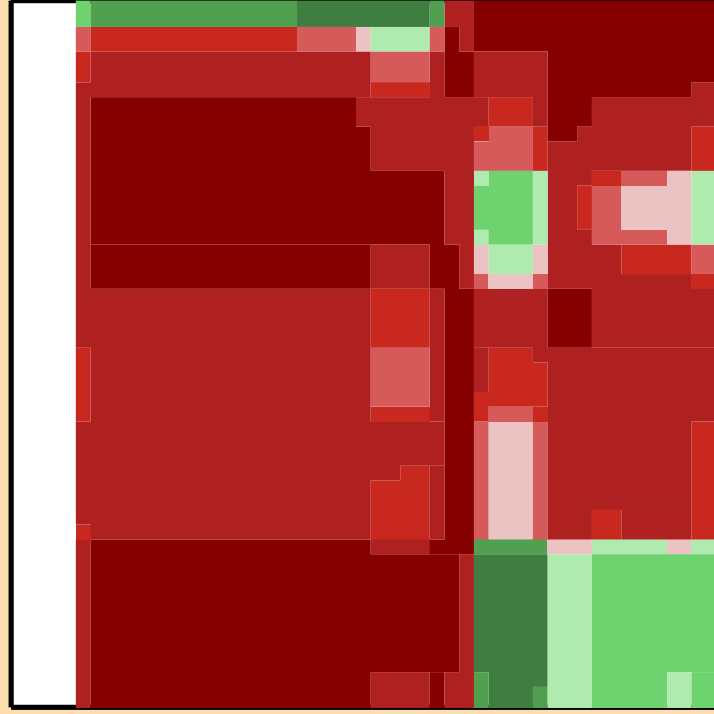
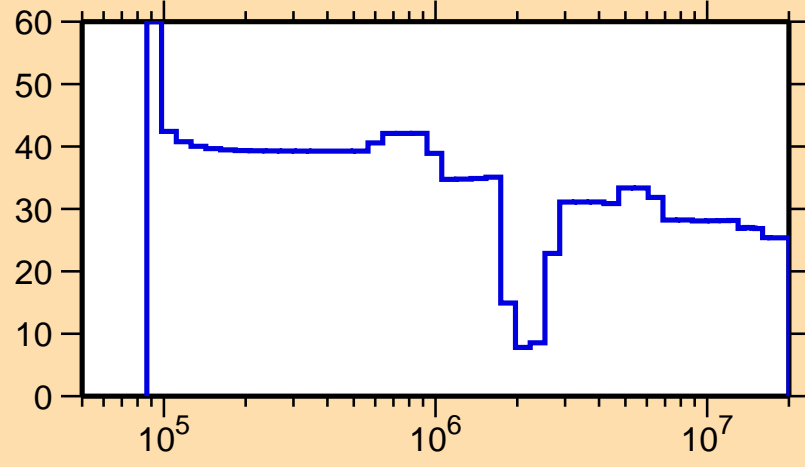


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

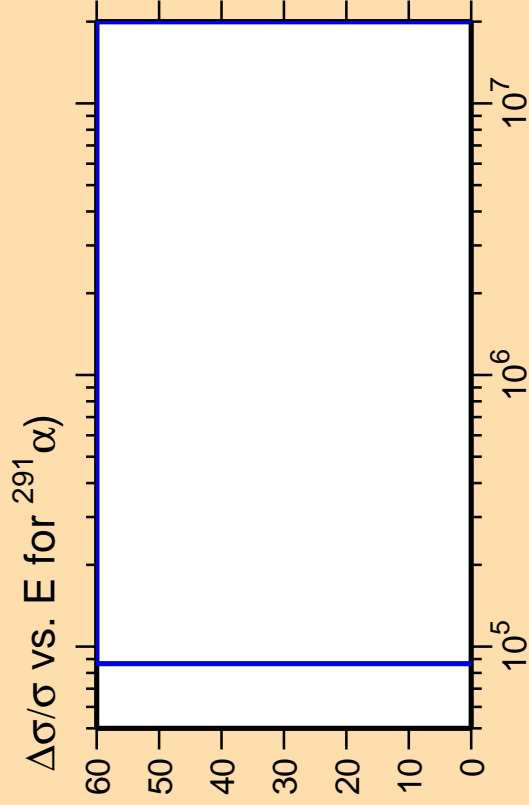
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs.  $E$  for  $^{291}_1$



Correlation Matrix

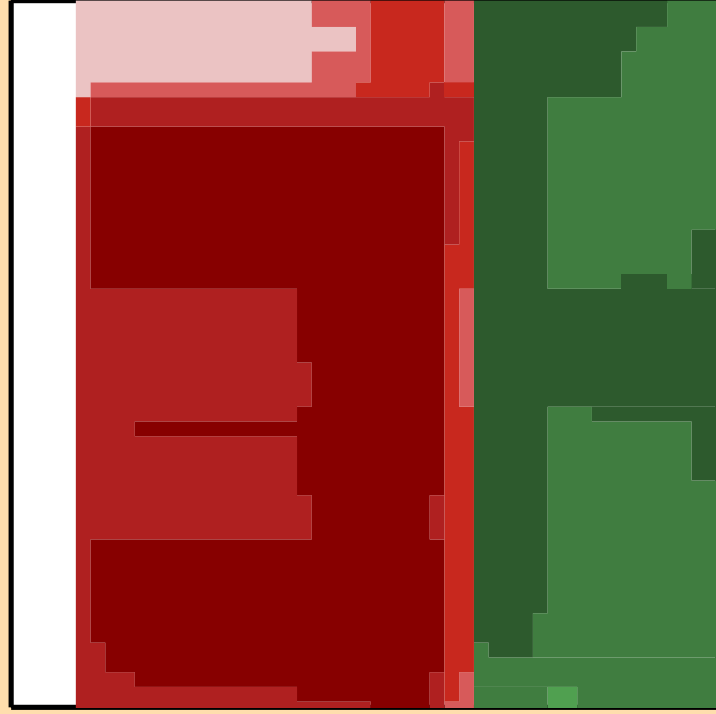
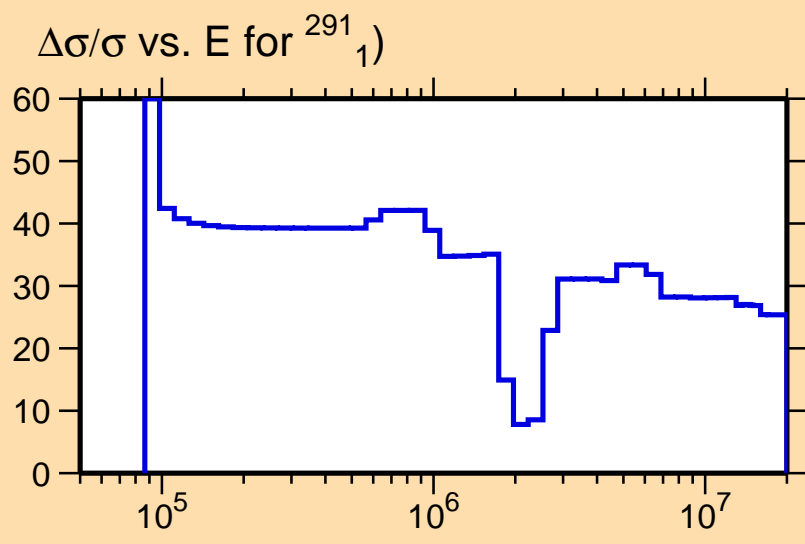


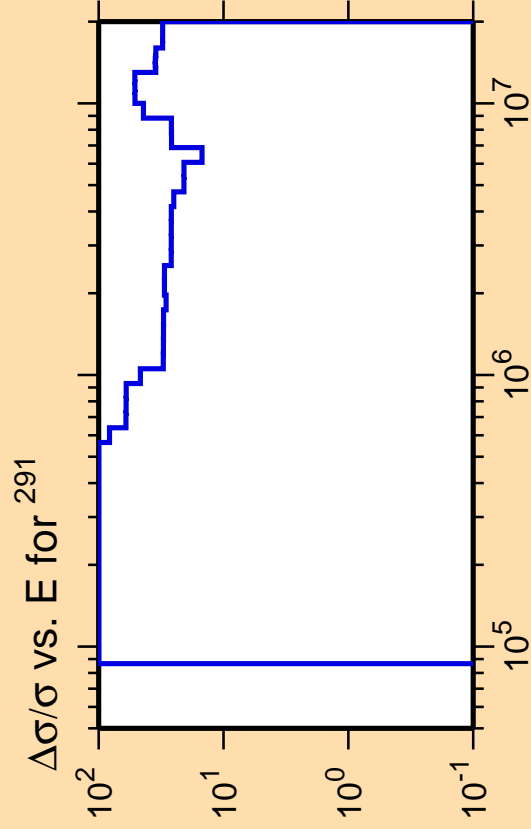


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.

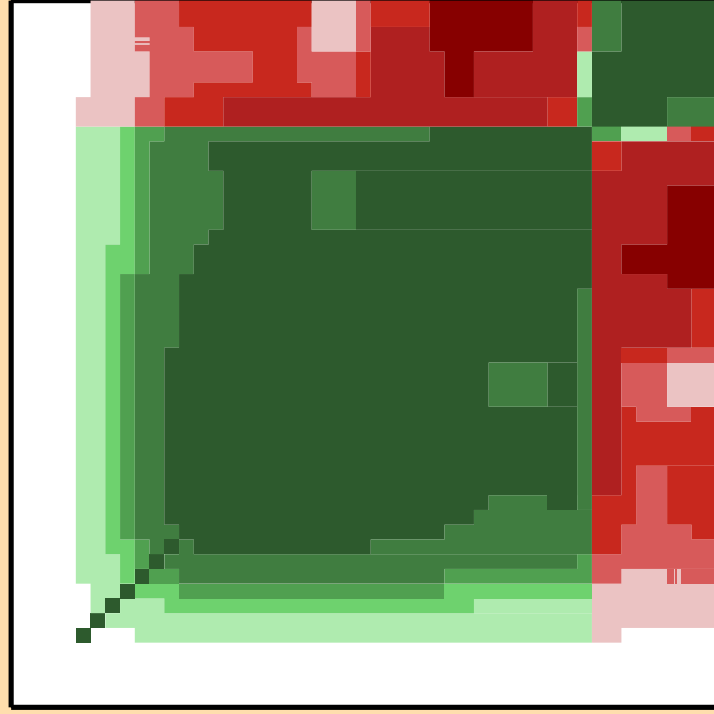
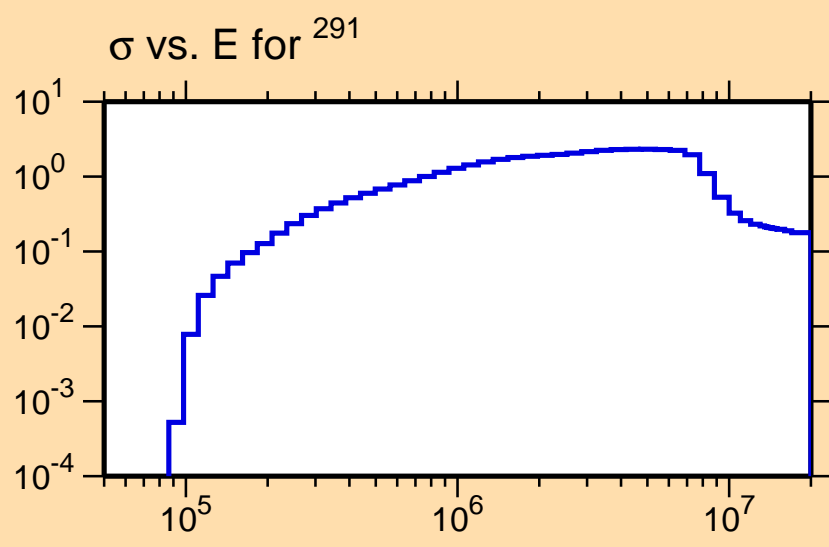




Ordinate scales are % relative standard deviation and barns.

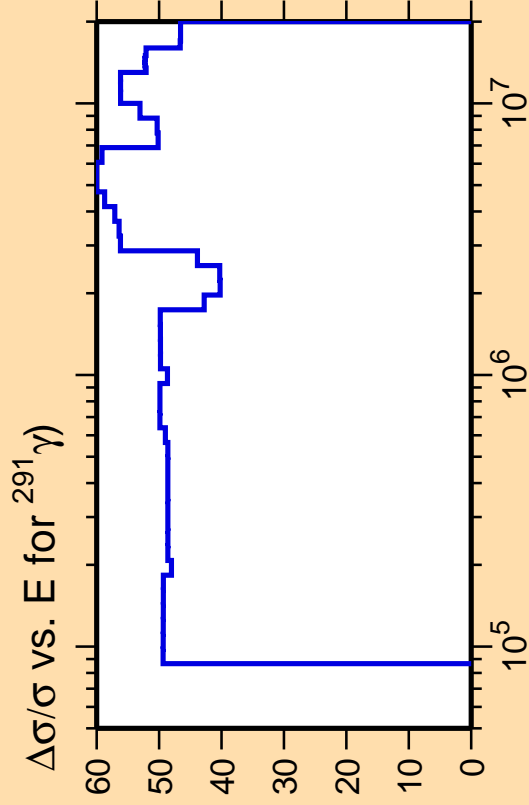
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

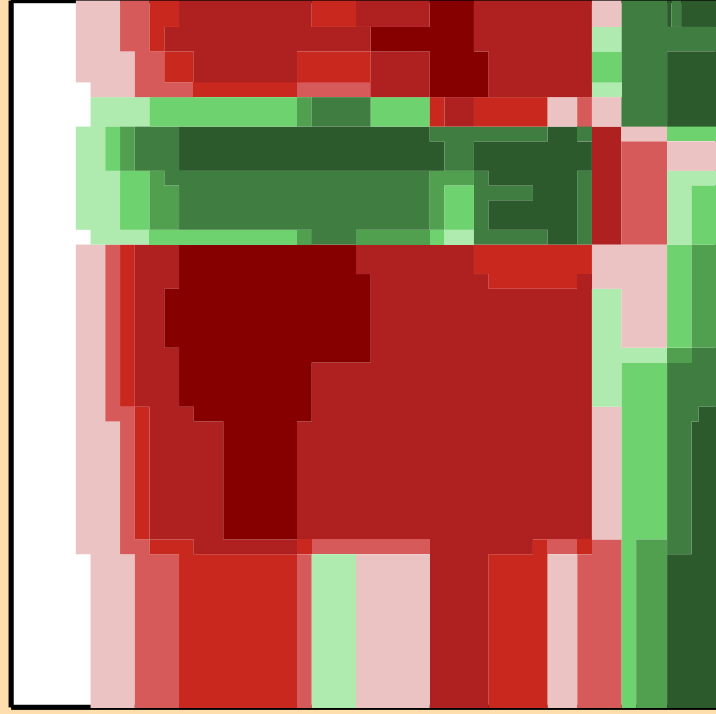
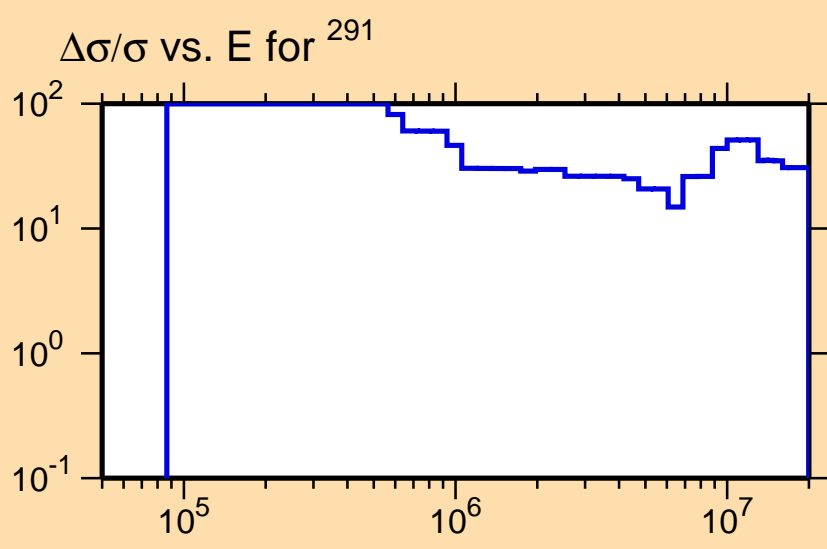




Ordinate scale is %  
relative standard deviation.

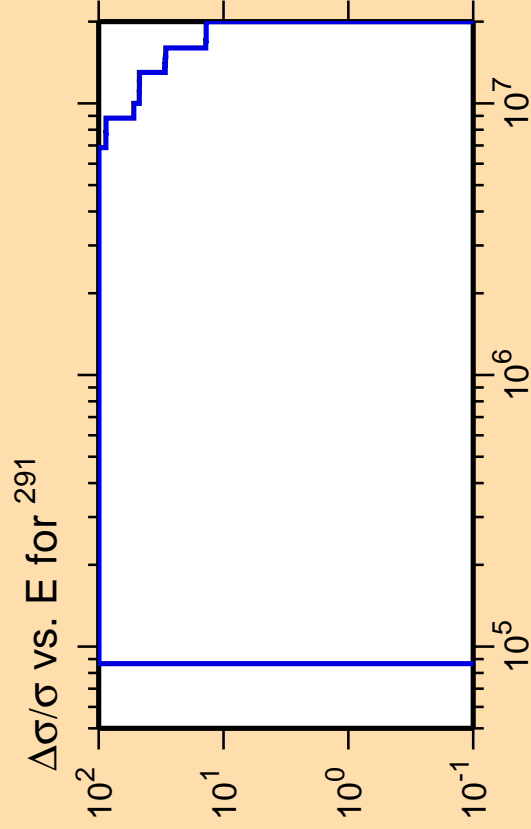
Abscissa scales are energy (eV).

Warning: some uncertainty  
data were suppressed.



Correlation Matrix



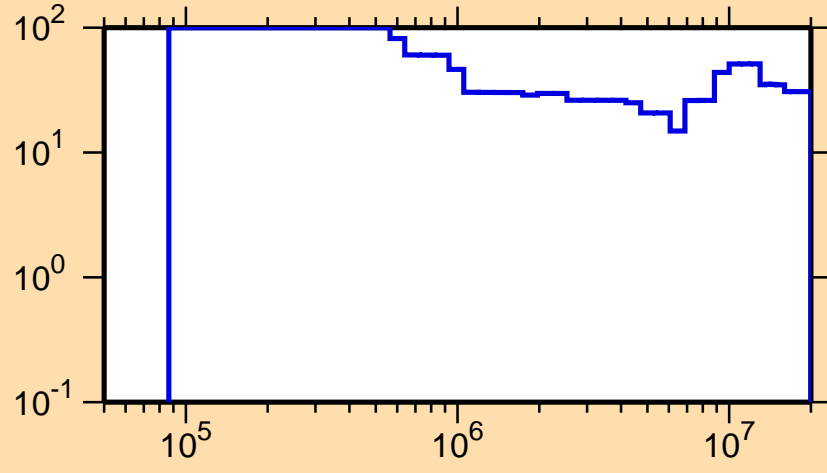


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

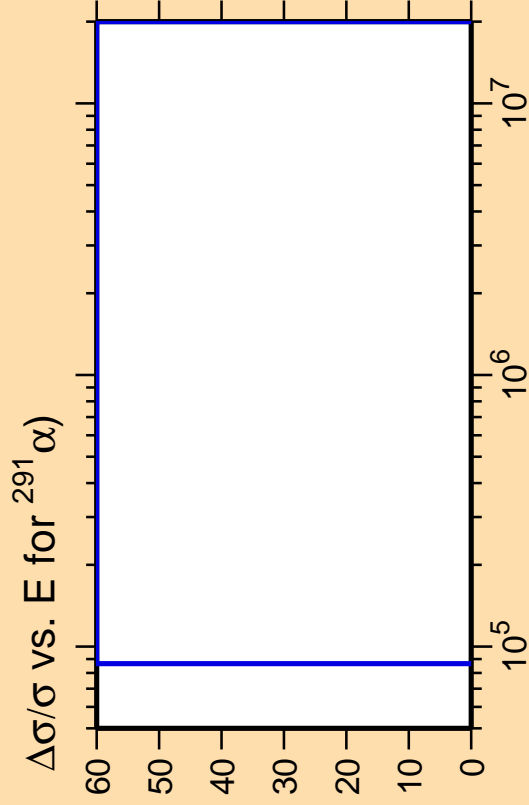
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix

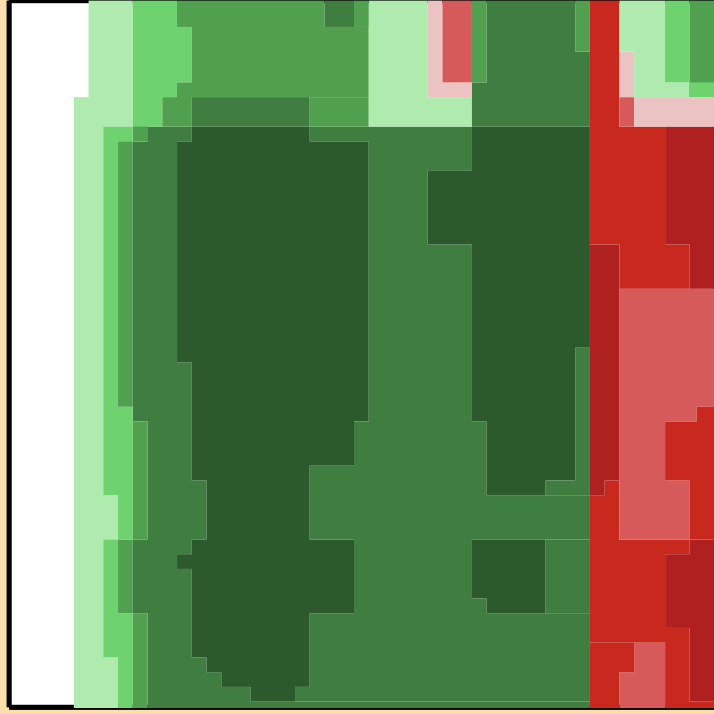
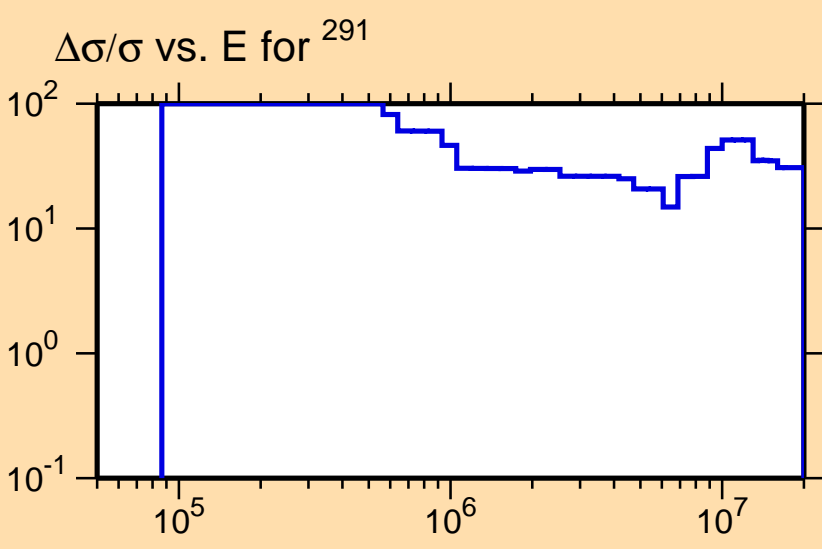




Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

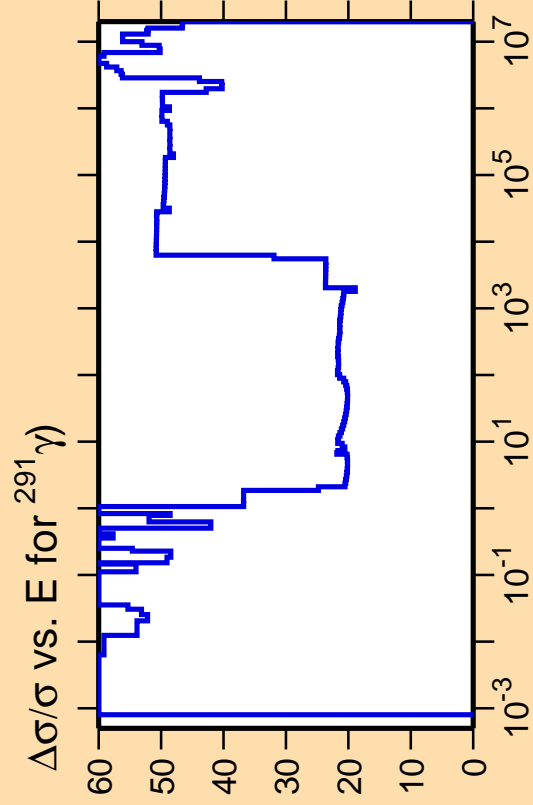
Warning: some uncertainty  
data were suppressed.



Correlation Matrix





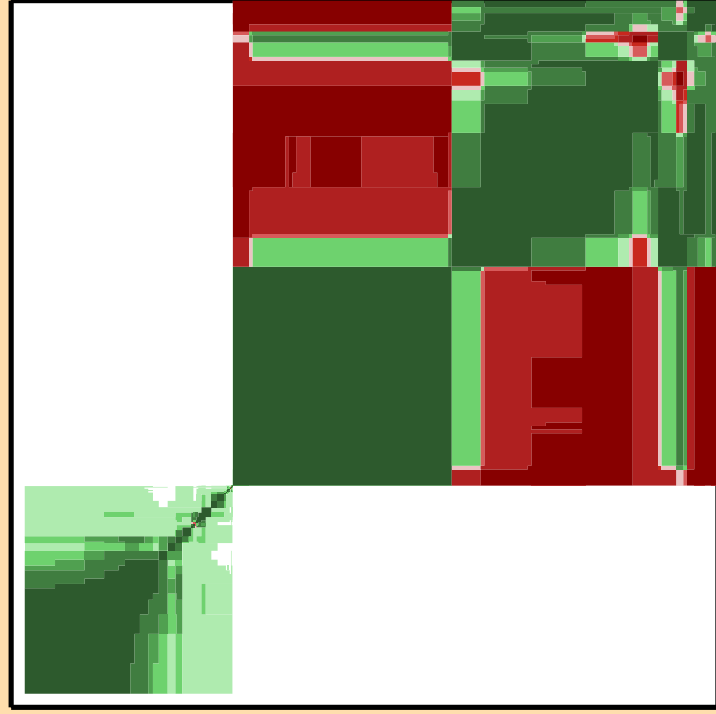
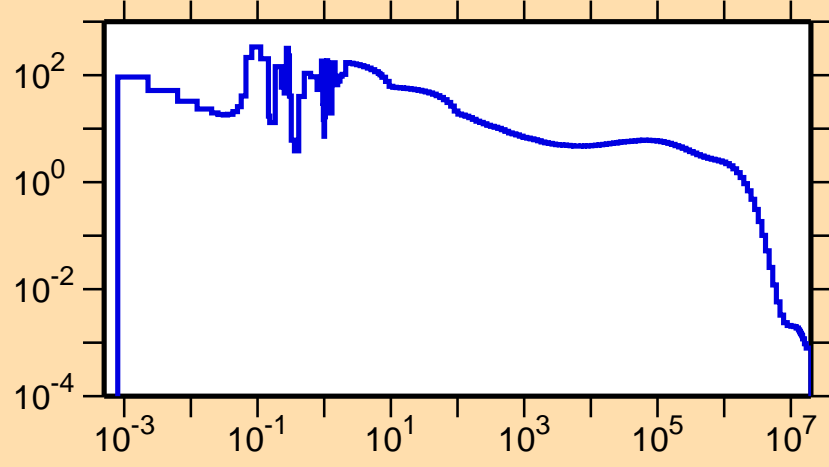


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

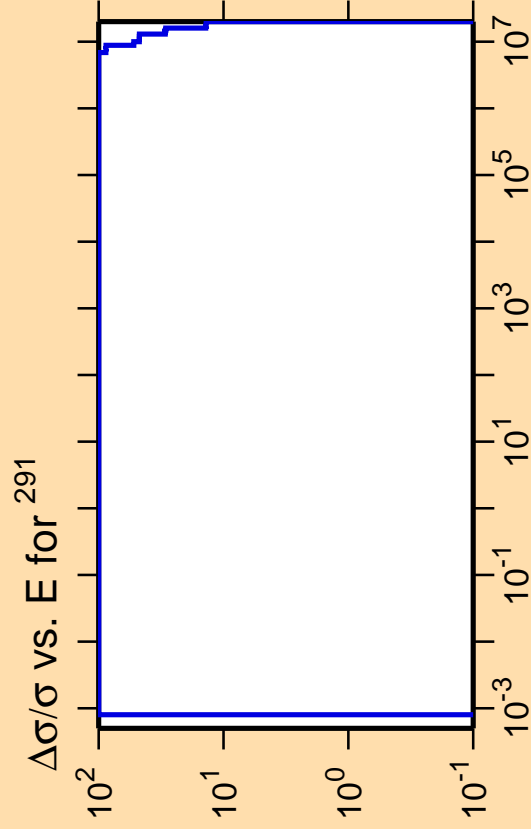
Warning: some uncertainty data were suppressed.

$\sigma$  vs.  $E$  for  $^{291}\gamma$



Correlation Matrix



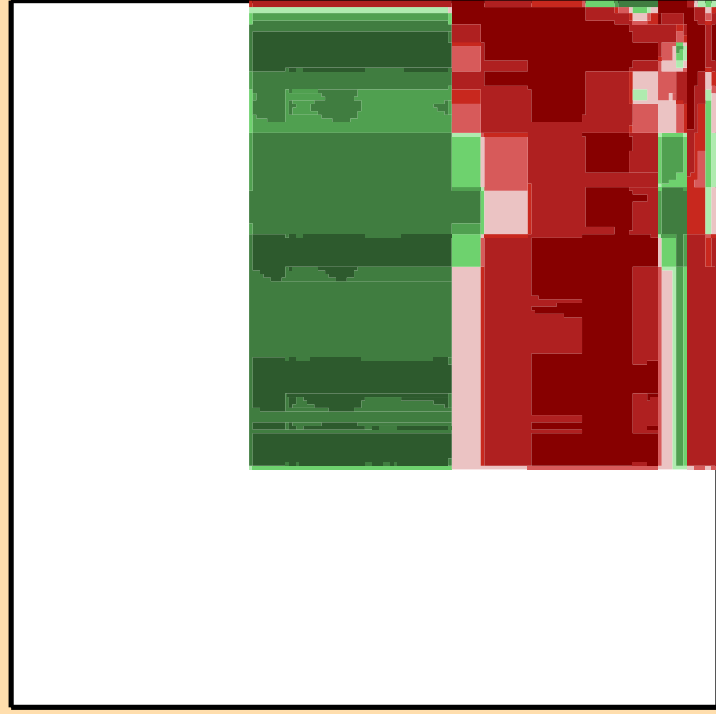
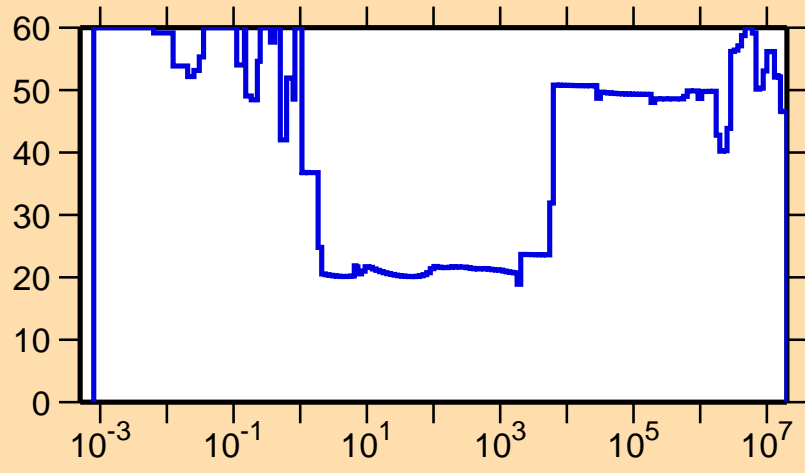


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

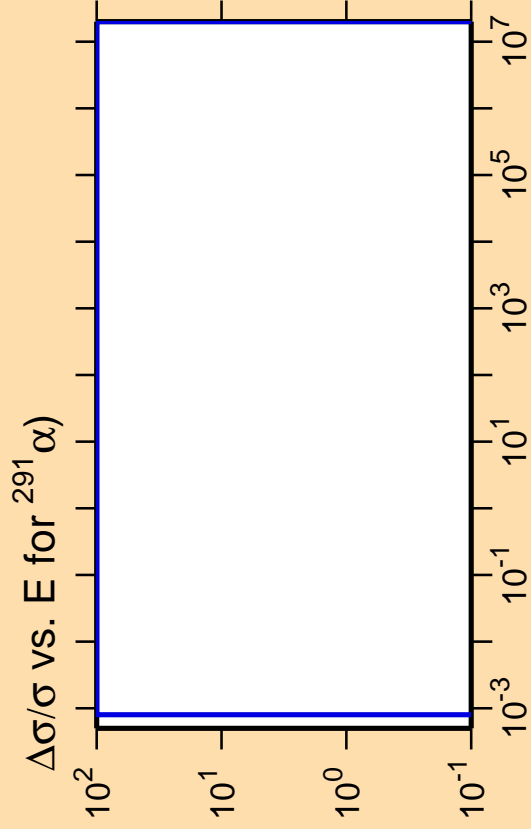
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}\gamma$



Correlation Matrix



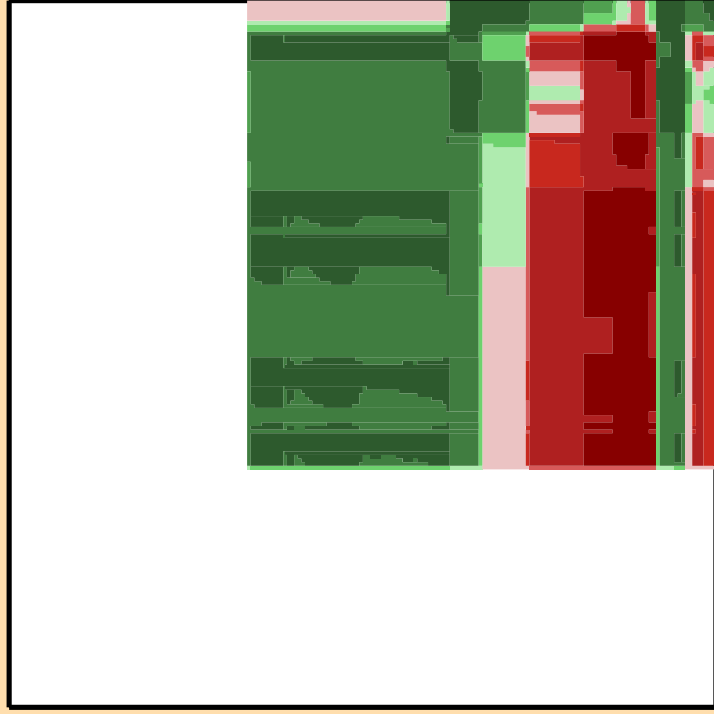
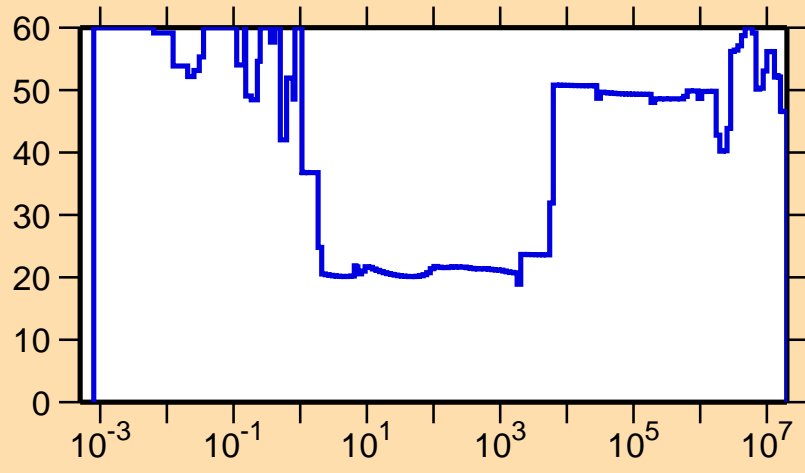


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

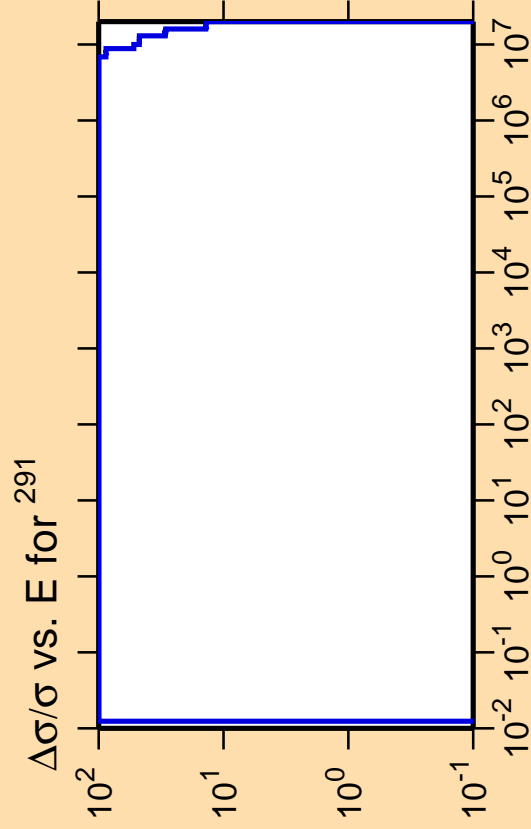
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}\gamma$



Correlation Matrix

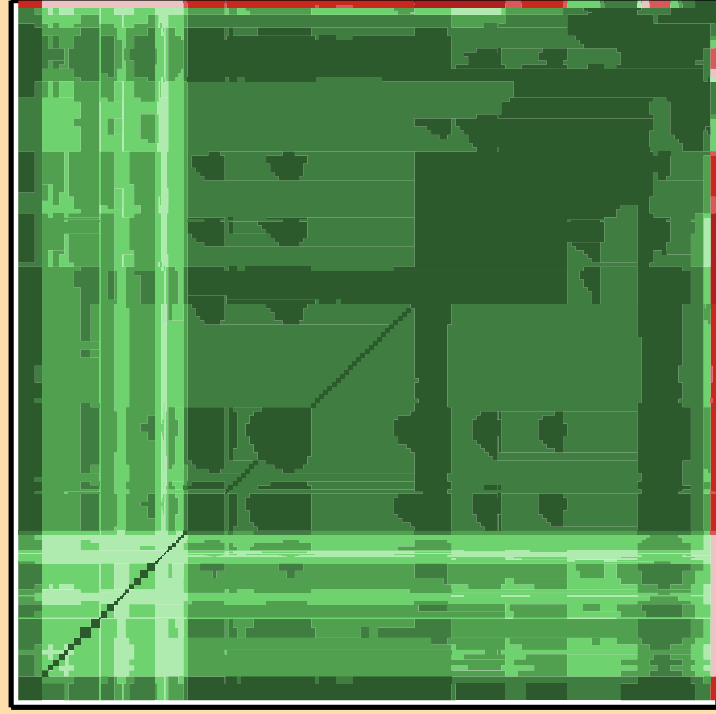
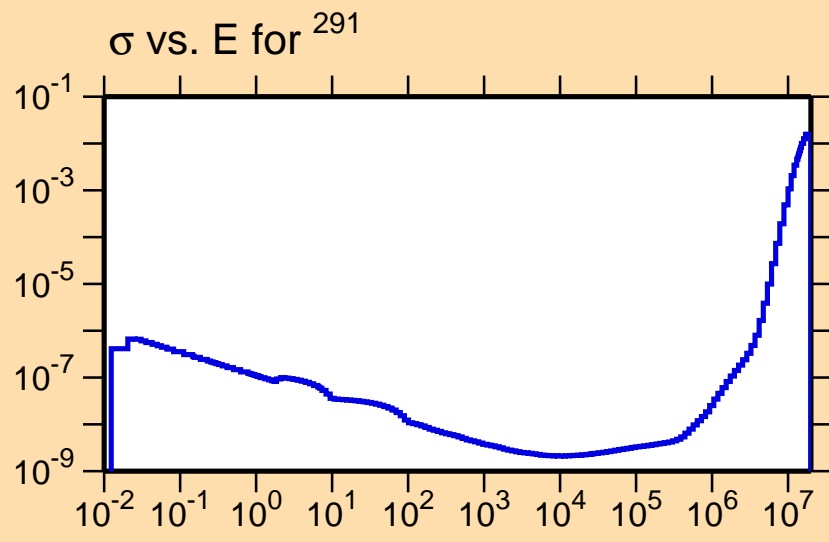




Ordinate scales are % relative standard deviation and barns.

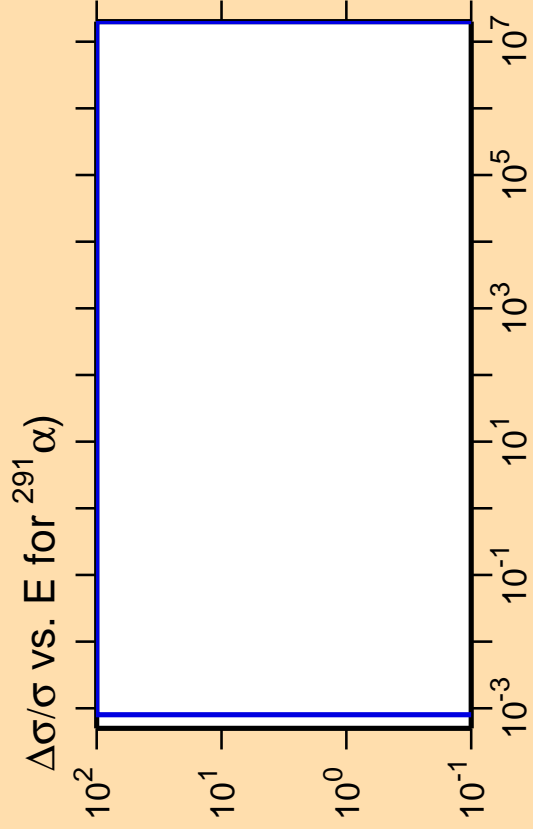
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix



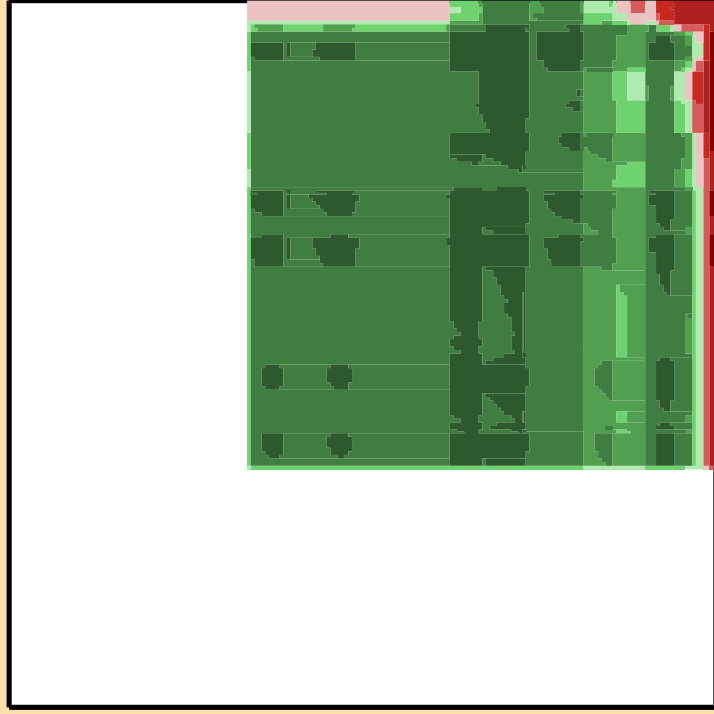
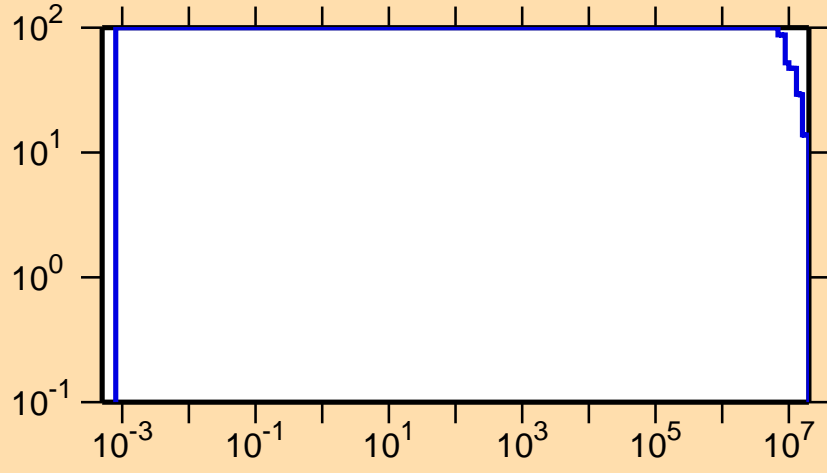


Ordinate scale is %  
relative standard deviation.

Abscissa scales are energy (eV).

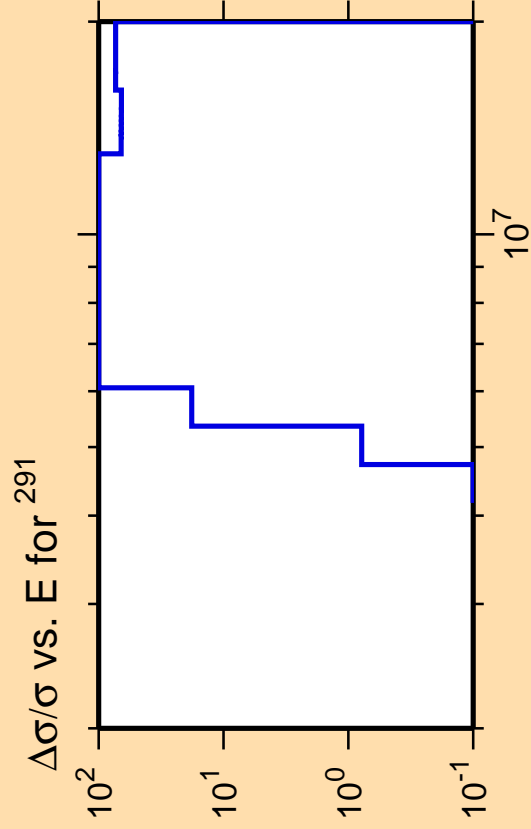
Warning: some uncertainty  
data were suppressed.

$\Delta\sigma/\sigma$  vs. E for  $^{291}$



Correlation Matrix

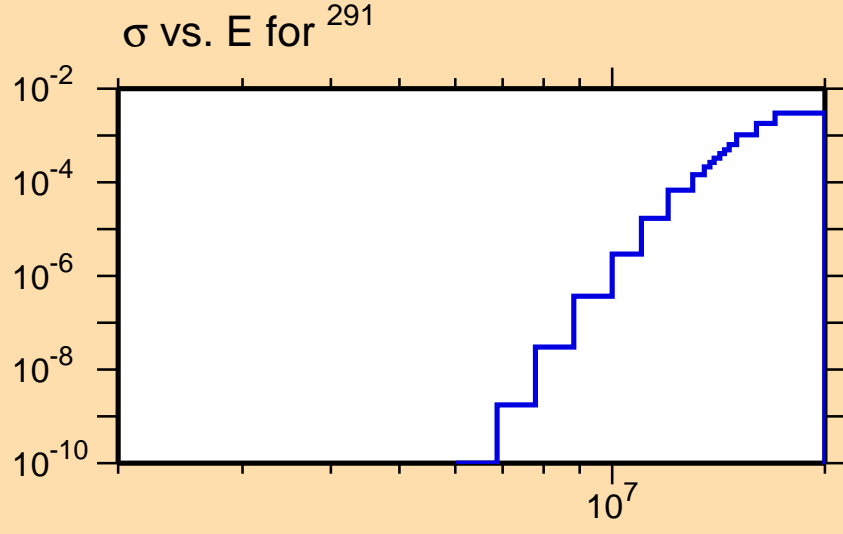




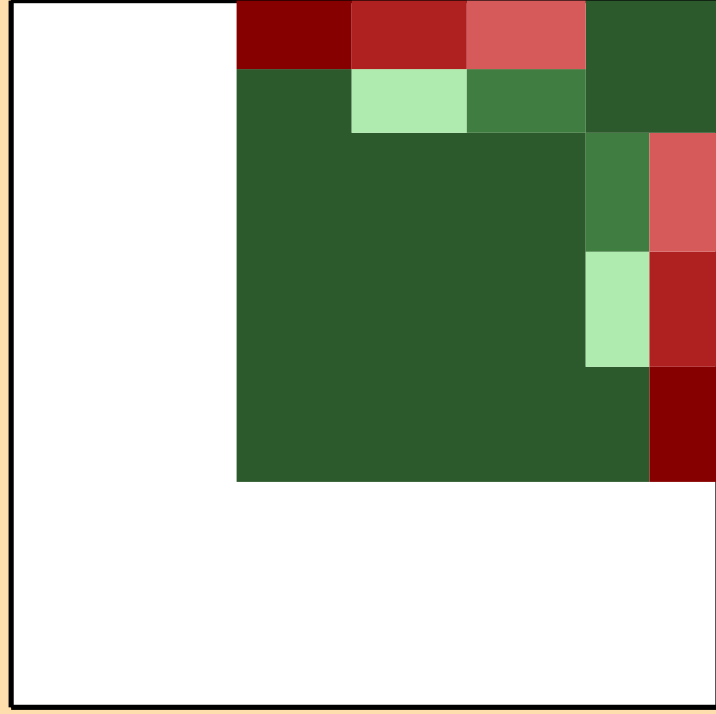
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

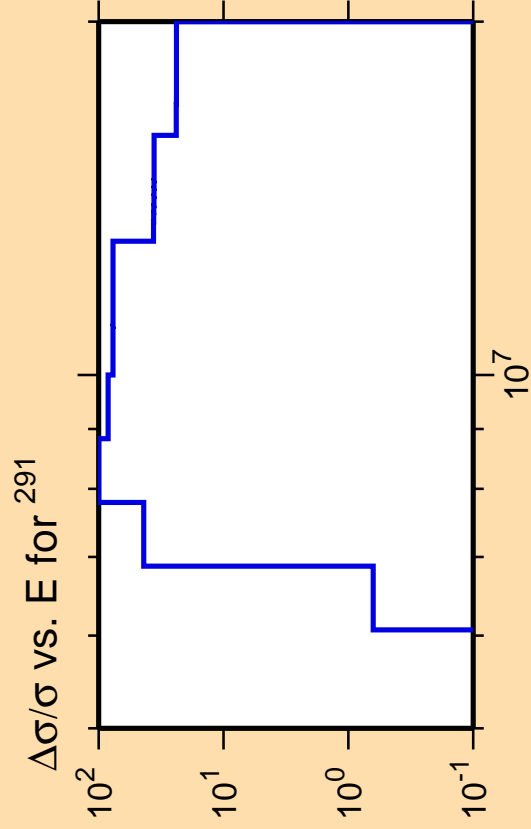


$\sigma$  vs.  $E$  for  $^{291}$



Correlation Matrix

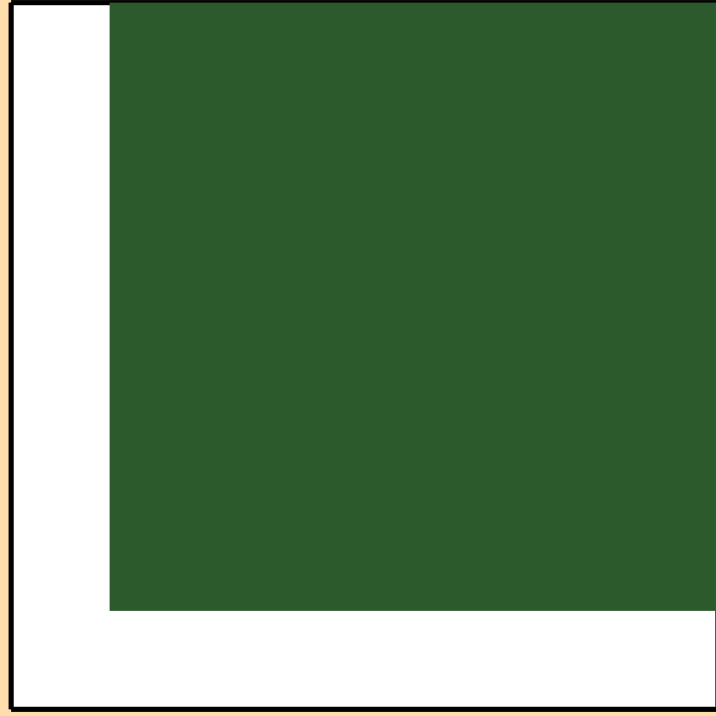
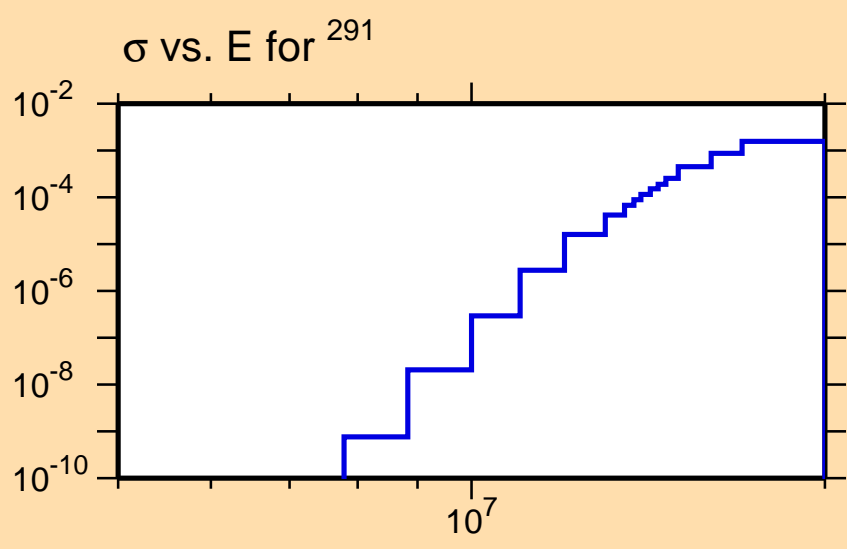




Ordinate scales are % relative standard deviation and barns.

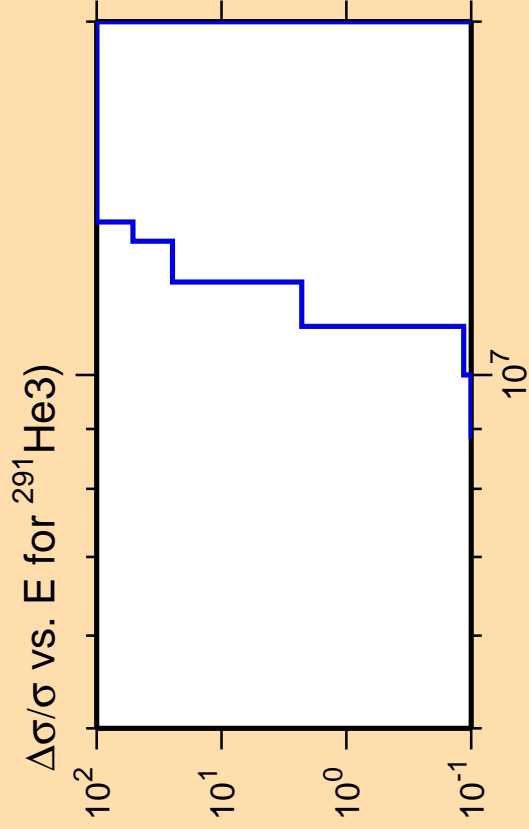
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

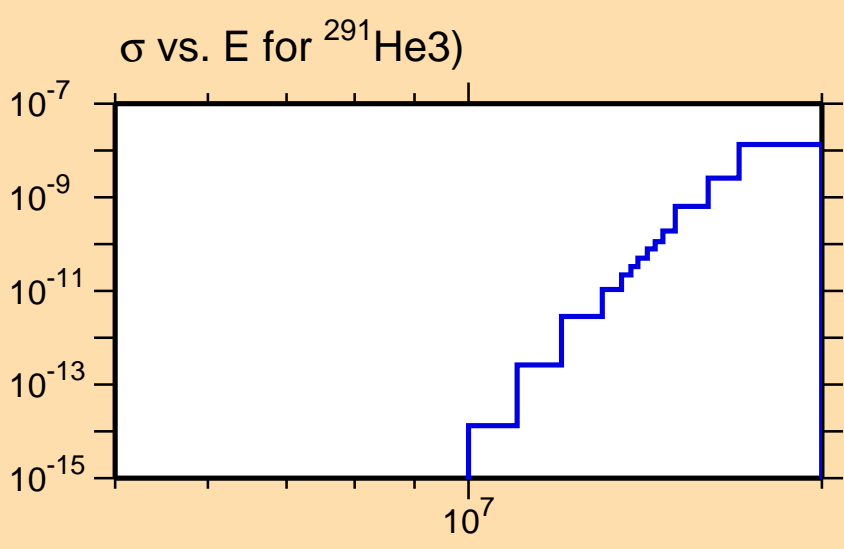




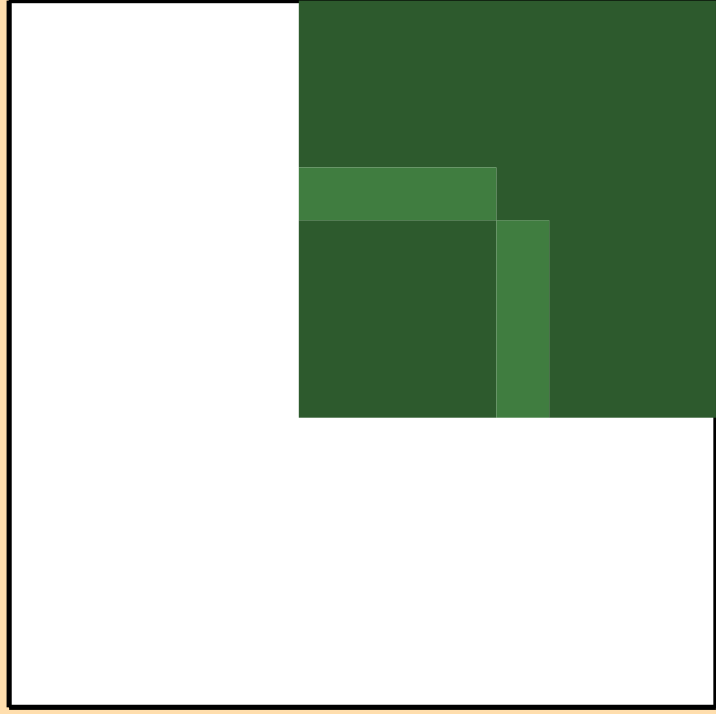
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

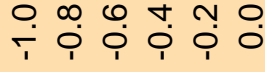
Warning: some uncertainty data were suppressed.



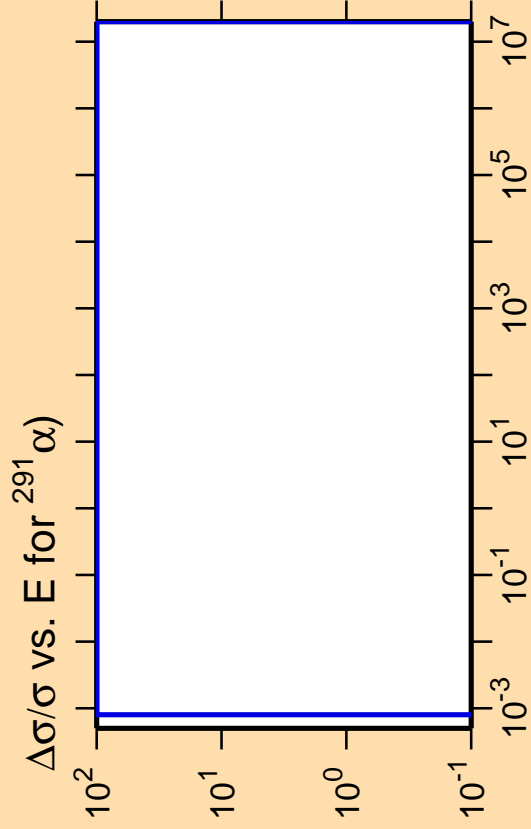
$\sigma$  vs. E for  $^{291}\text{He3}$



Correlation Matrix



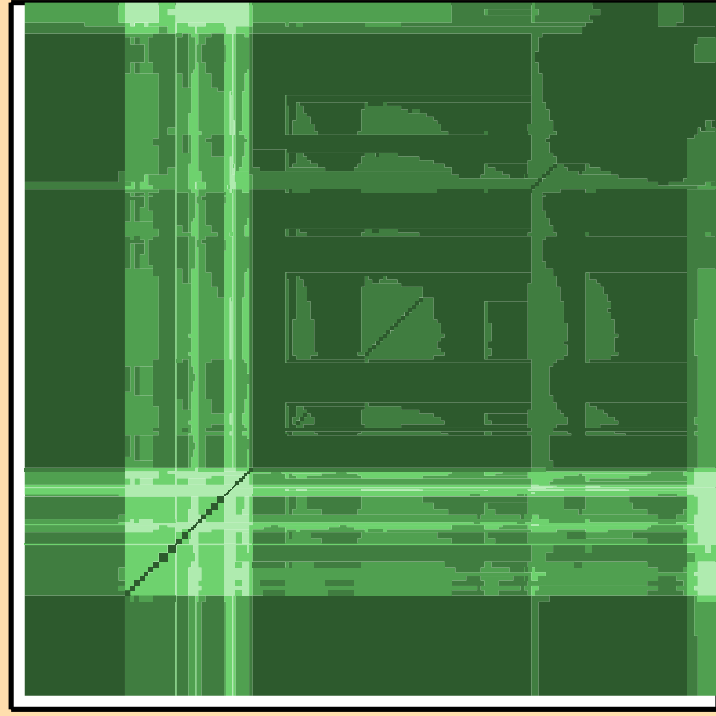




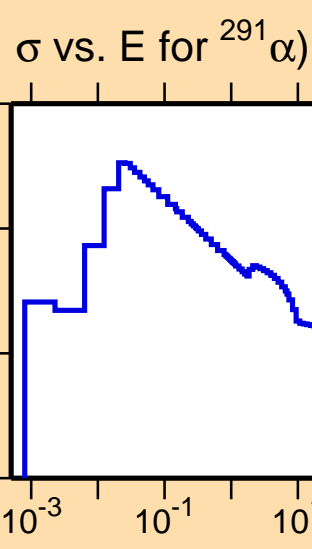
Ordinate scales are % relative standard deviation and barns.

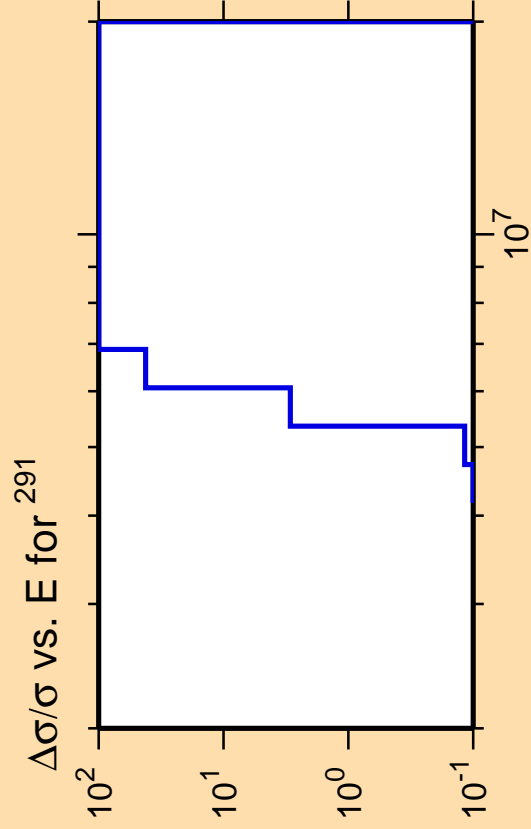
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

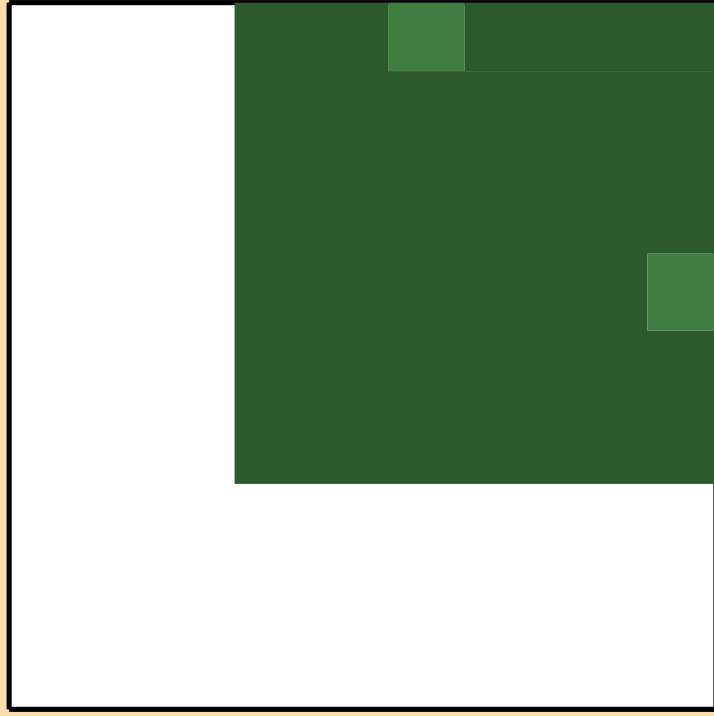
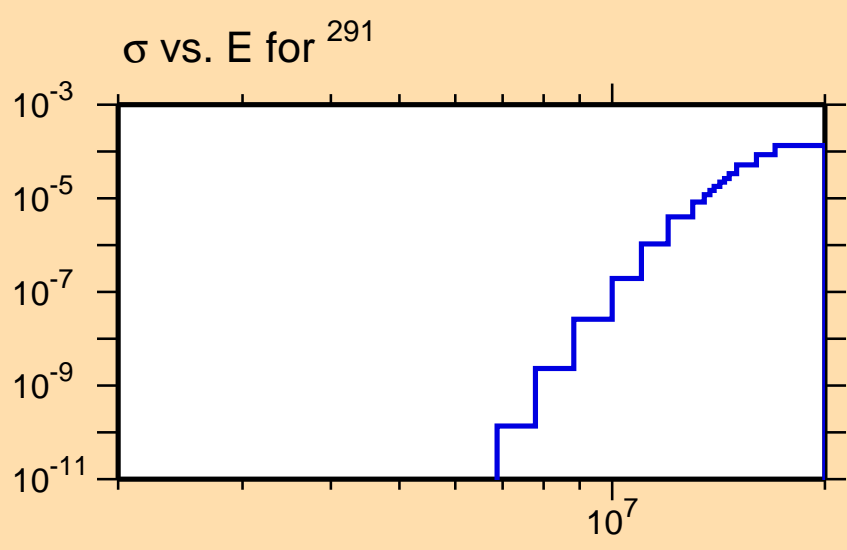




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

