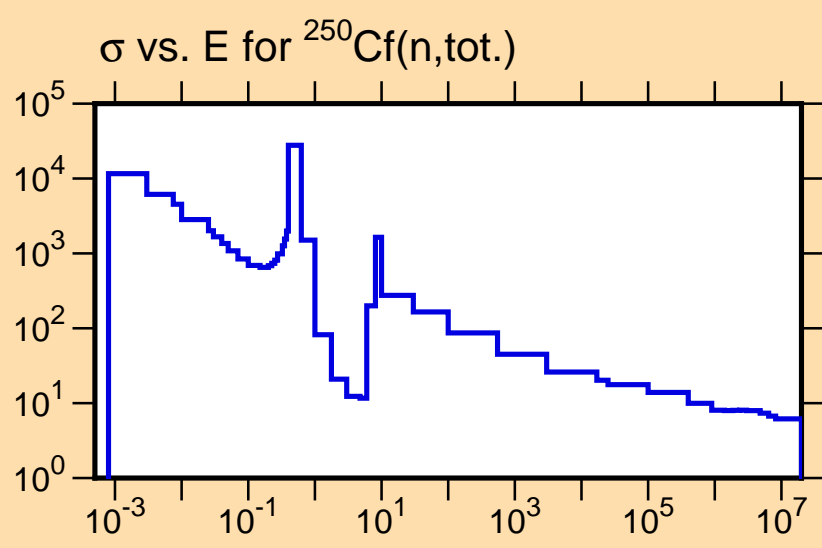


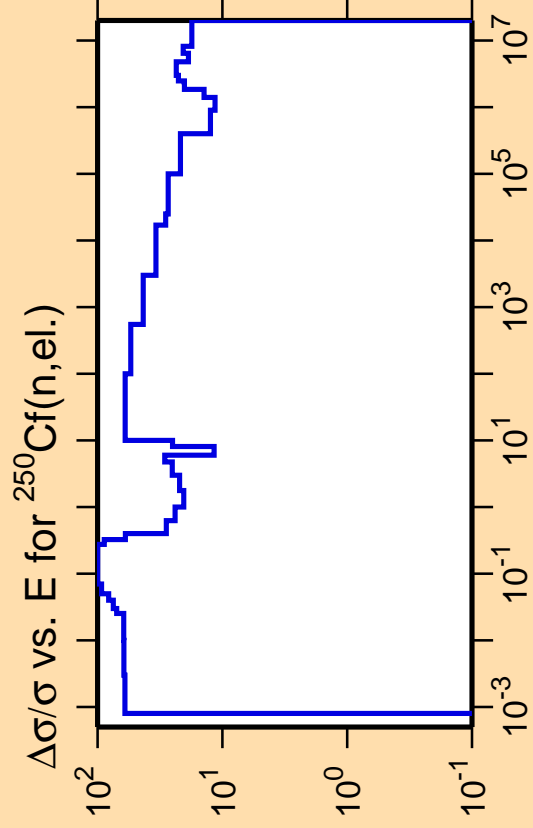
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).



Correlation Matrix

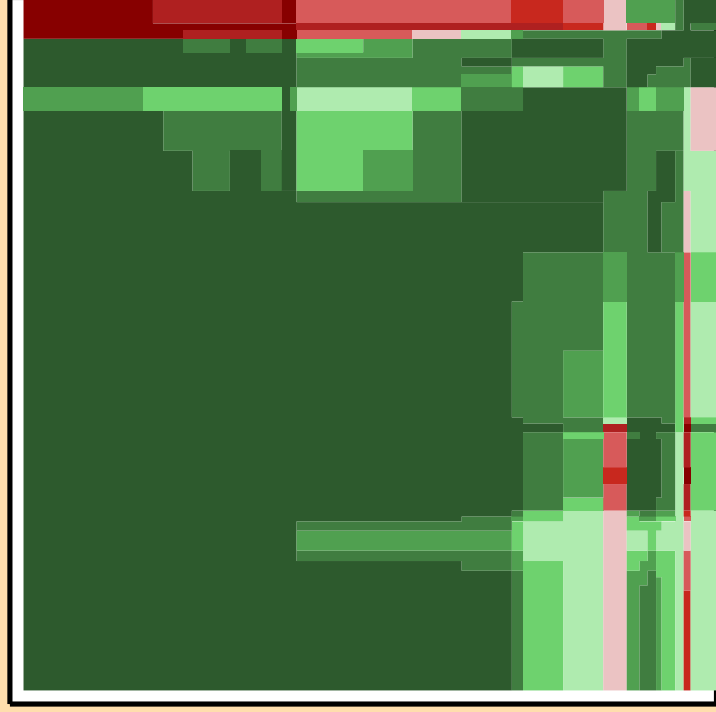
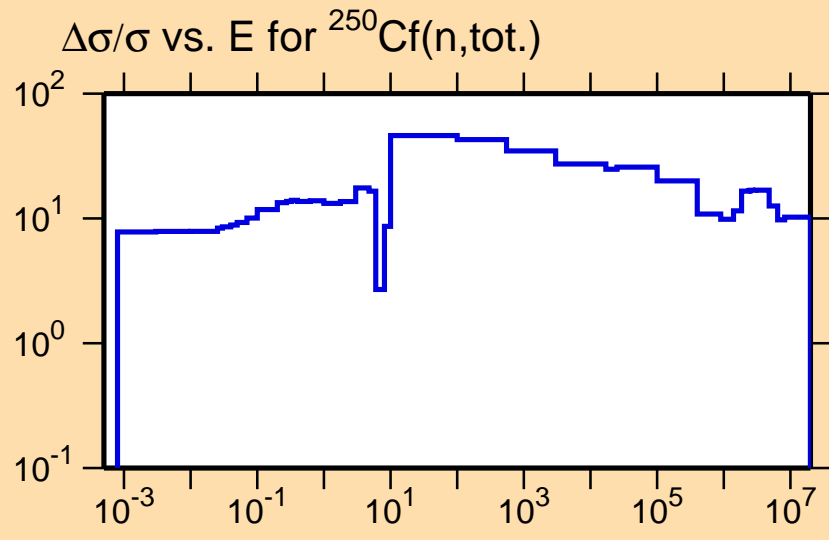




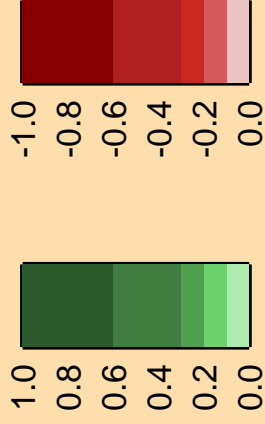
Ordinate scale is %
relative standard deviation.

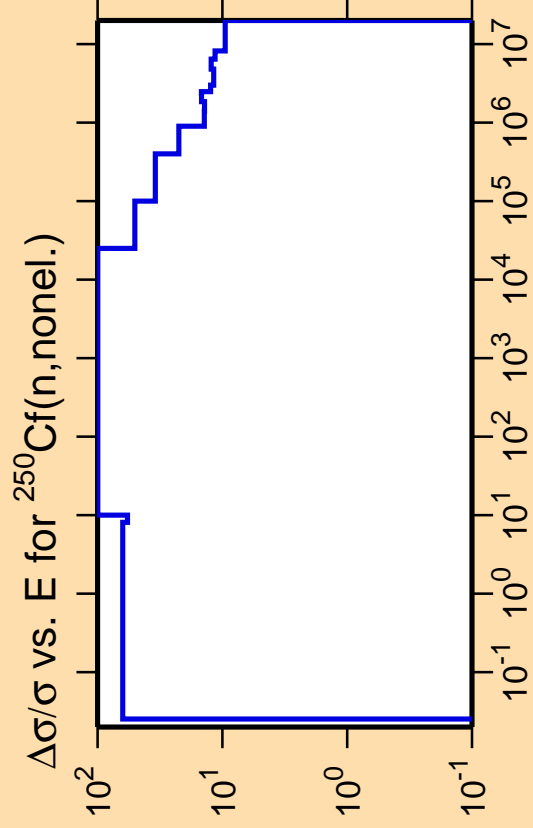
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

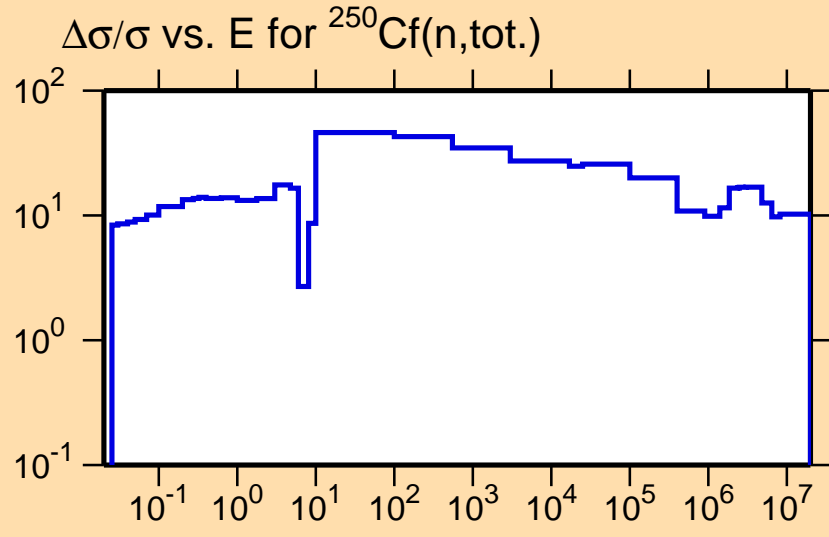




Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

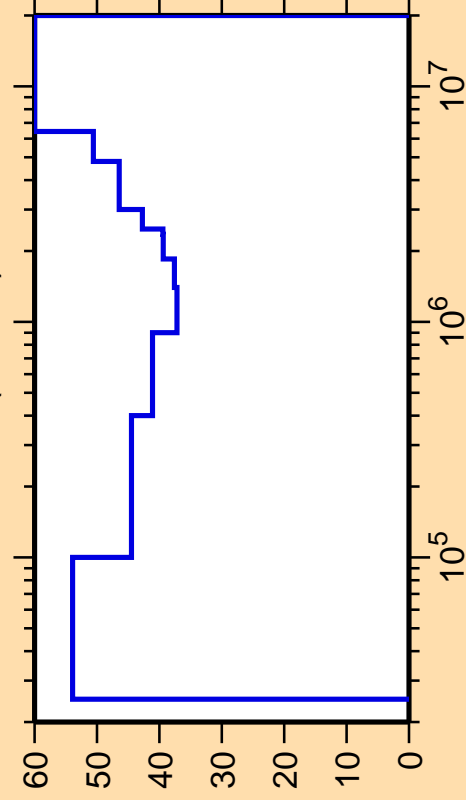
Warning: some uncertainty
data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{inel.})$

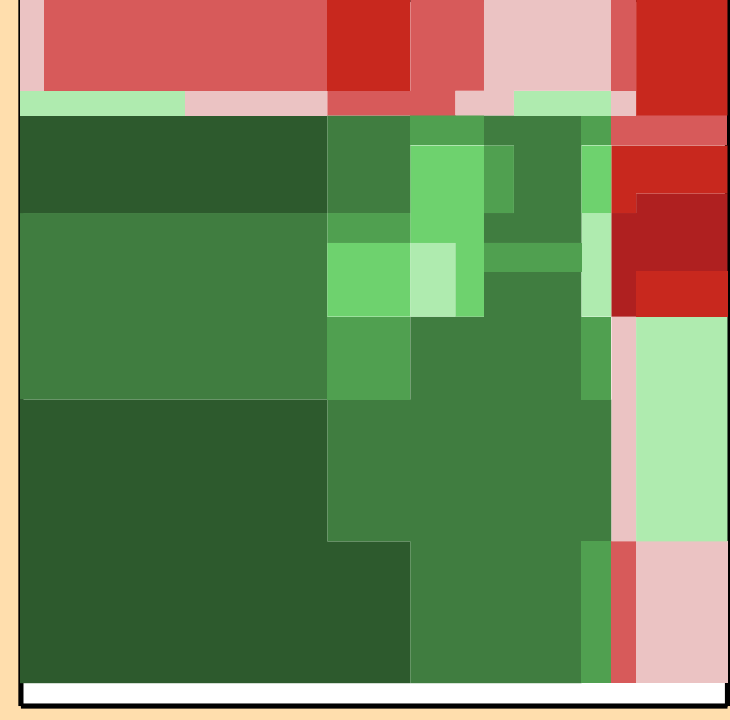
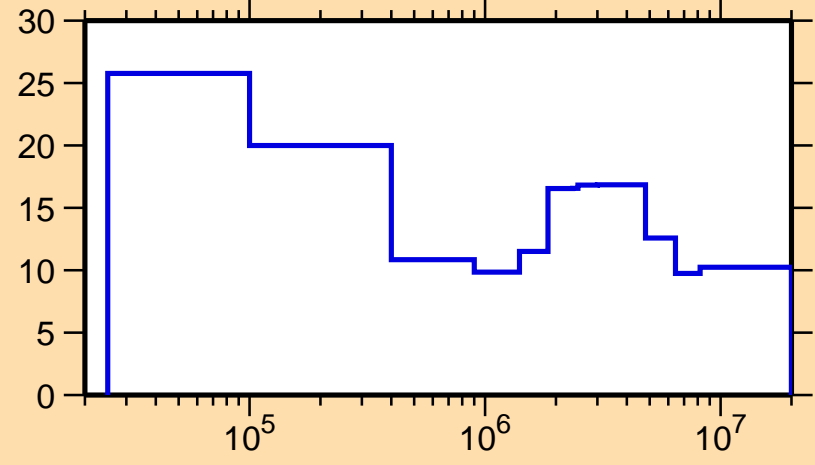


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

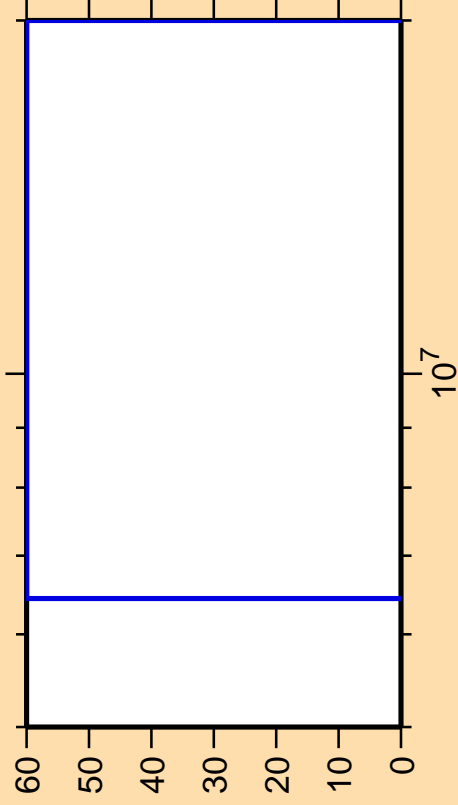
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{tot.})$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$

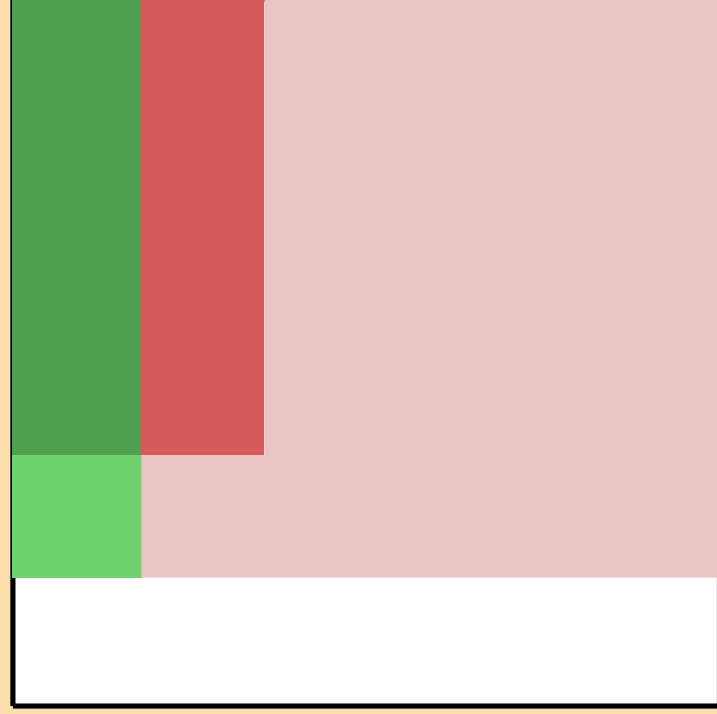
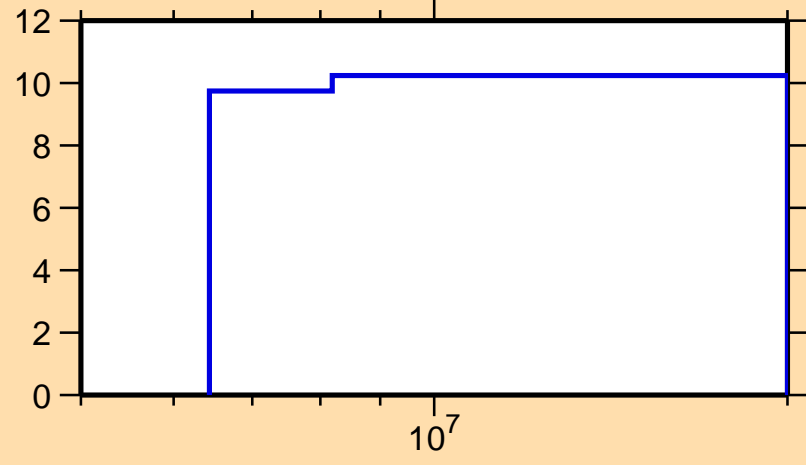


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

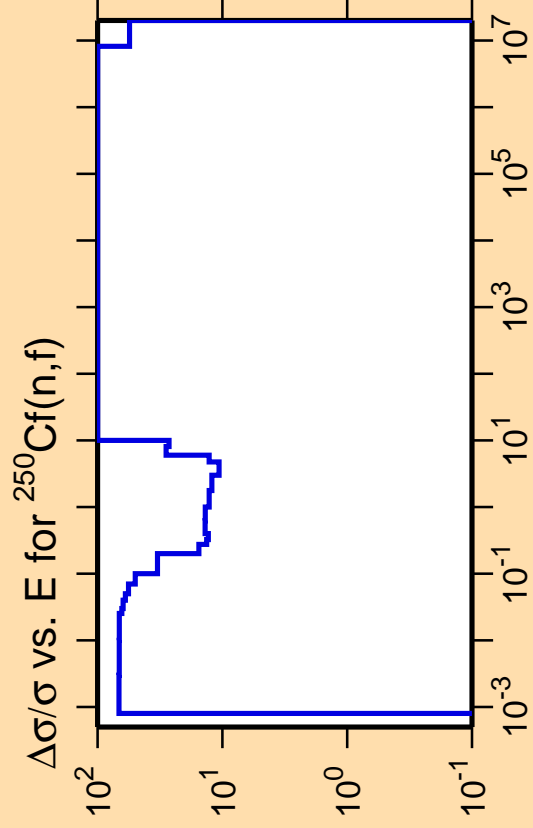
Warning: some uncertainty
data were suppressed.

$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{tot.})$



Correlation Matrix

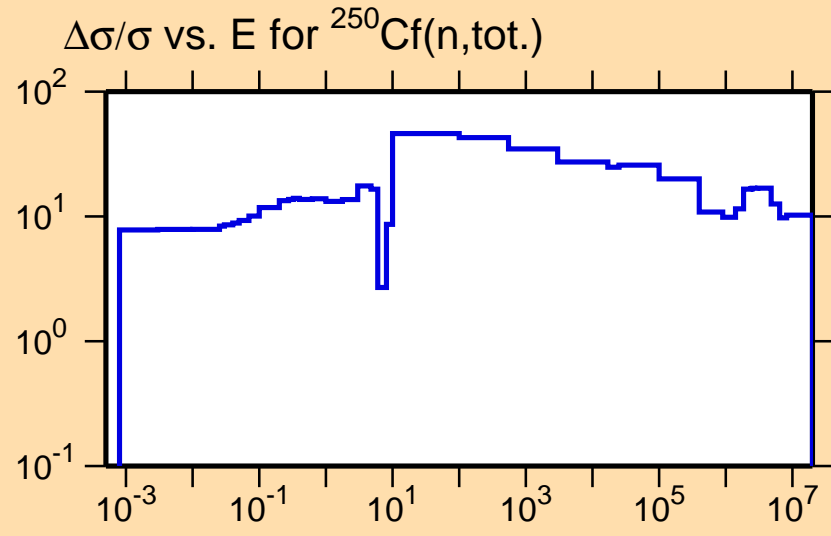




Ordinate scale is %
relative standard deviation.

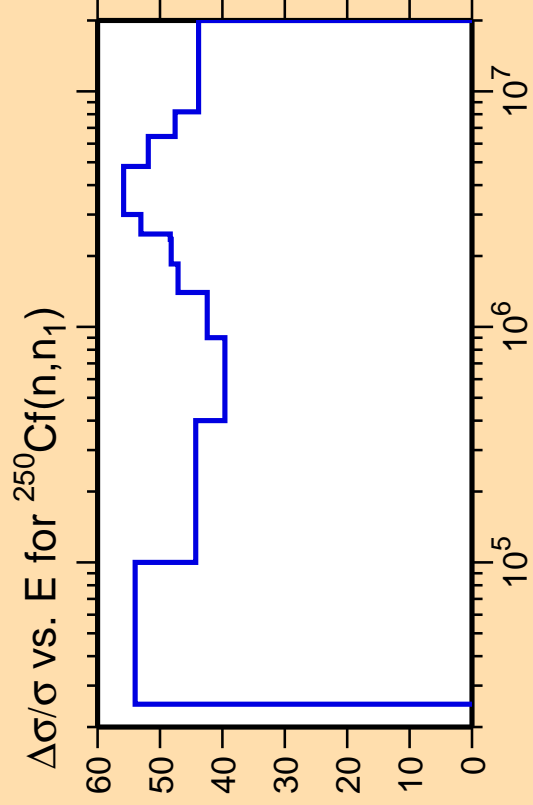
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



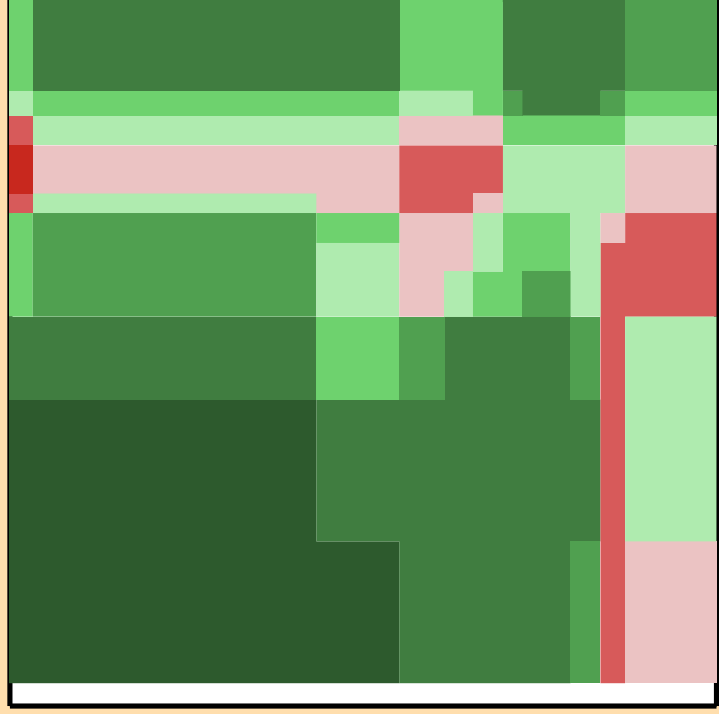
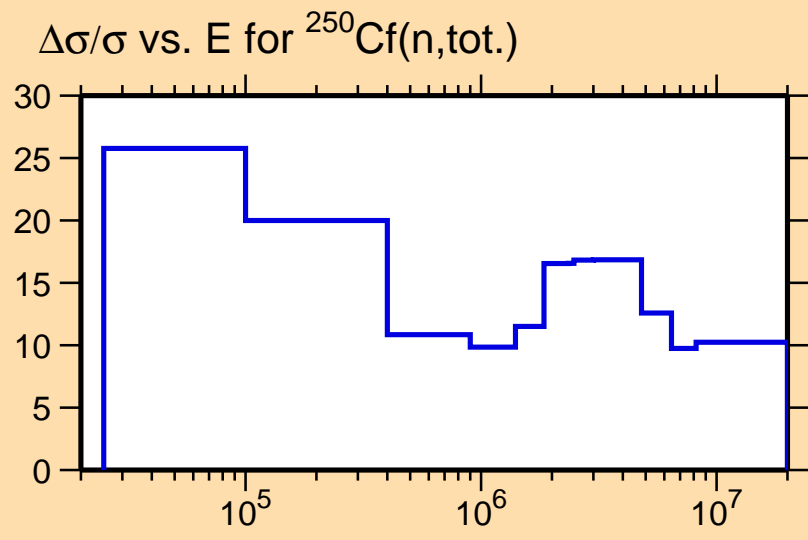
Correlation Matrix



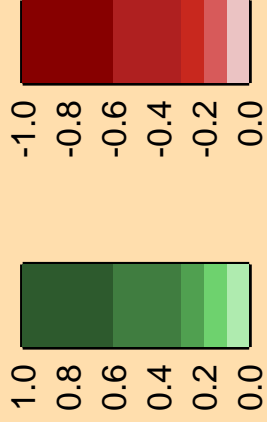


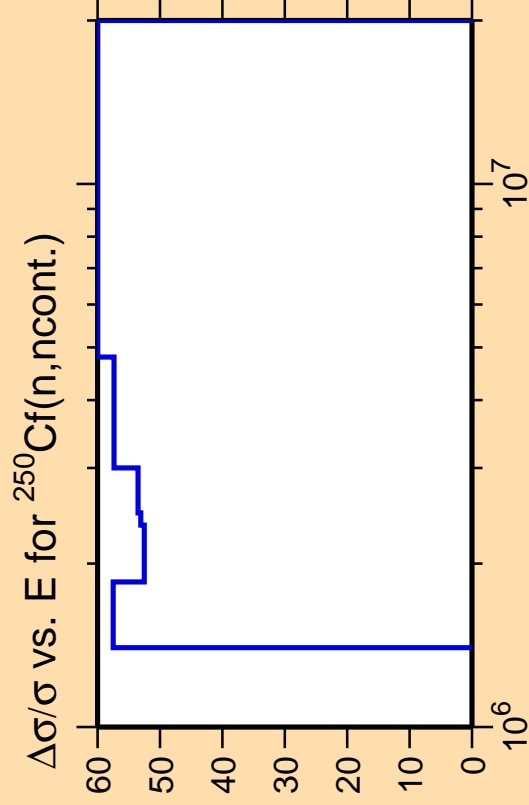
Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).



Correlation Matrix

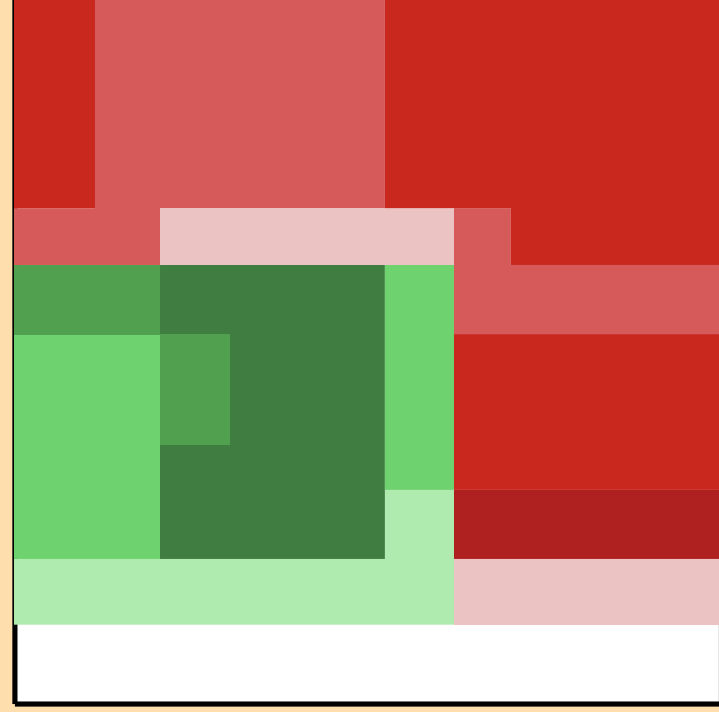
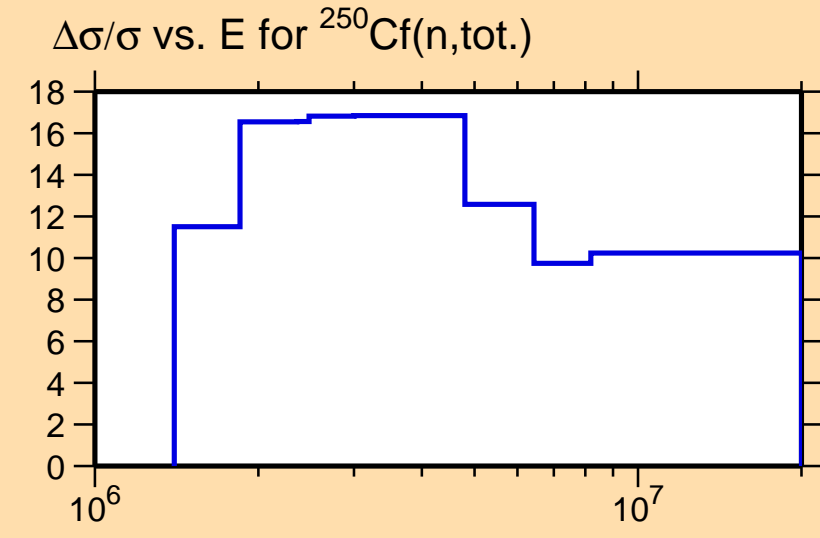




Ordinate scale is %
relative standard deviation.

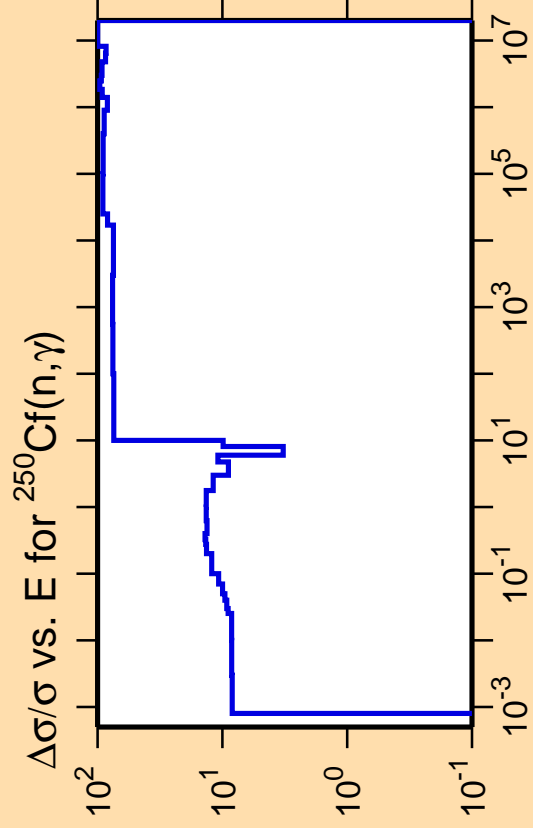
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

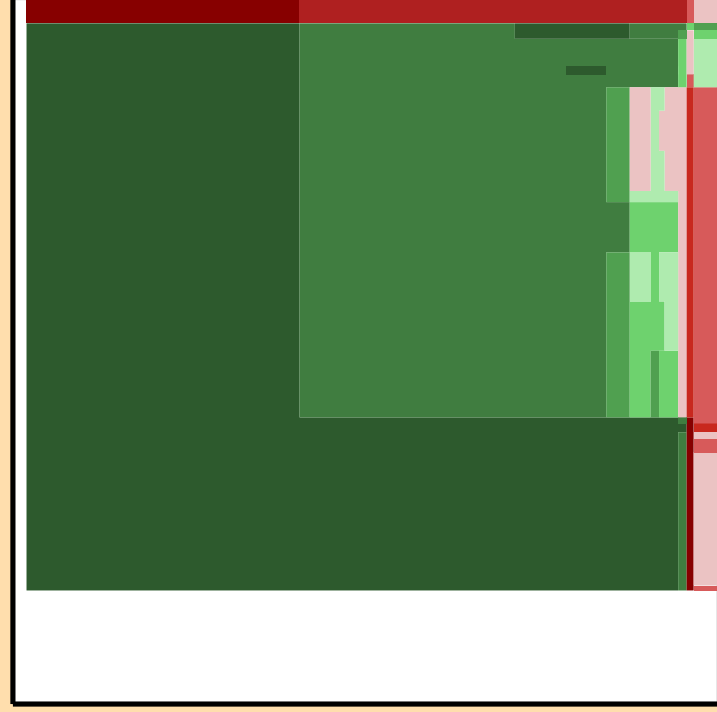
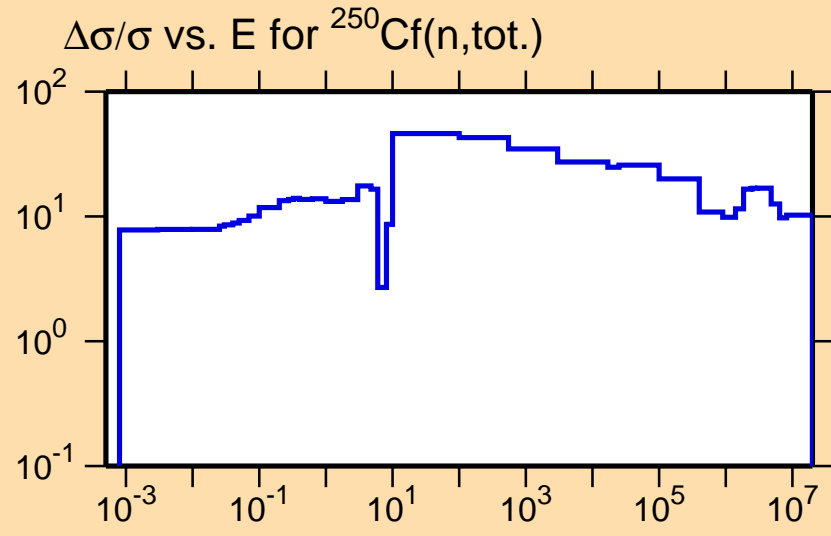




Ordinate scale is %
relative standard deviation.

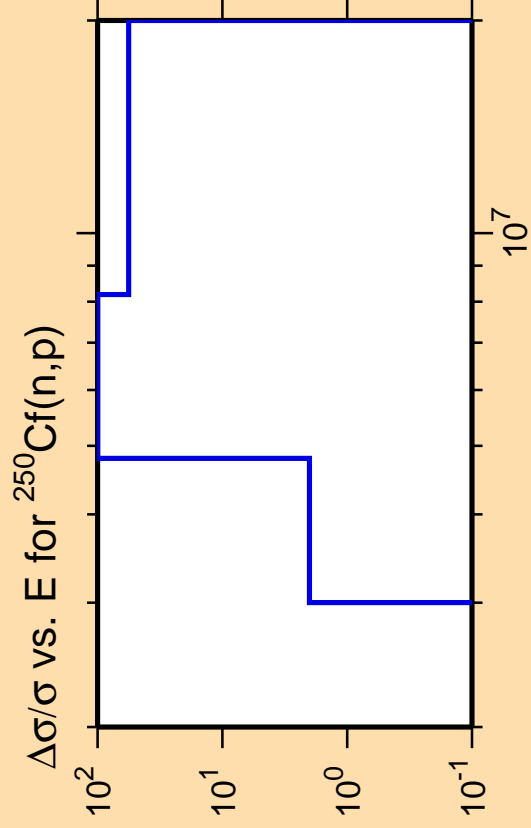
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

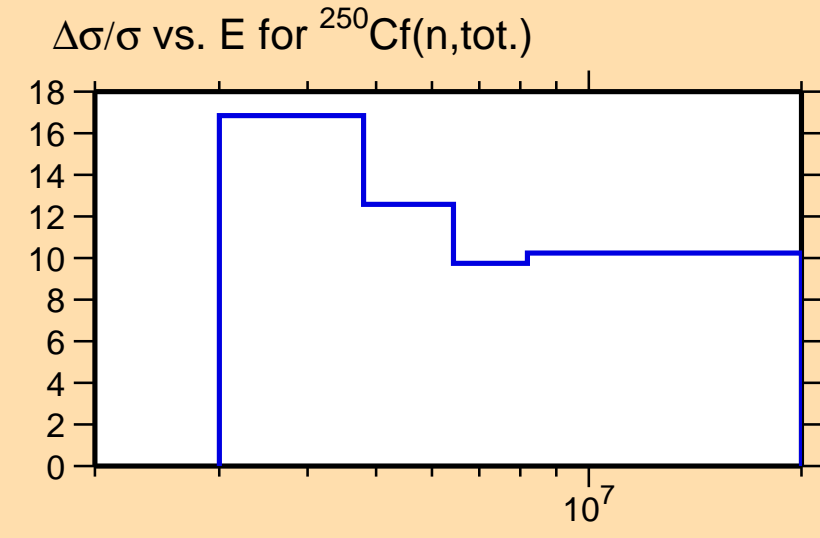




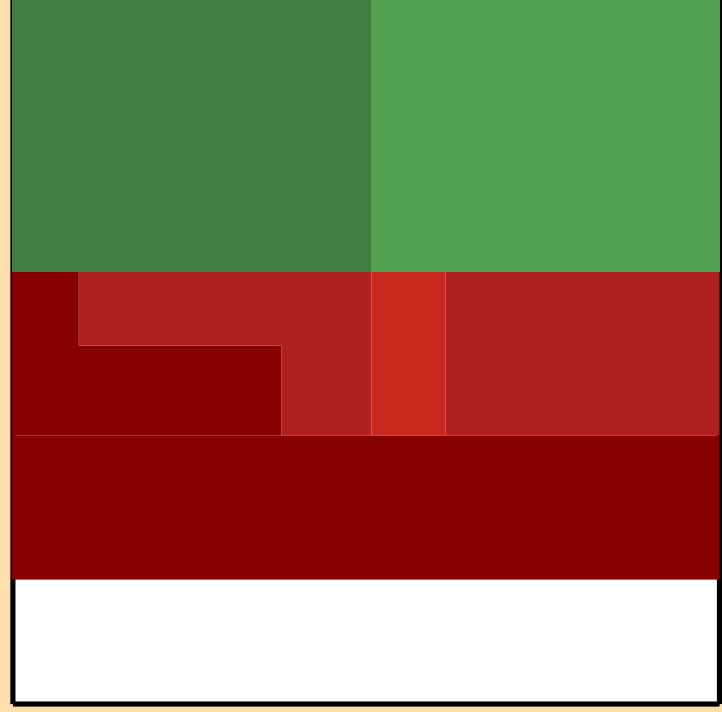
Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

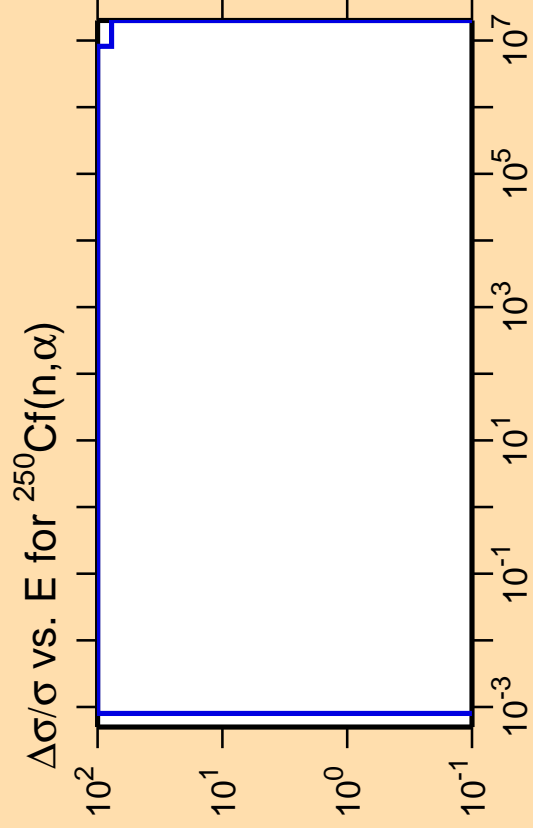


$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{tot.})$



Correlation Matrix

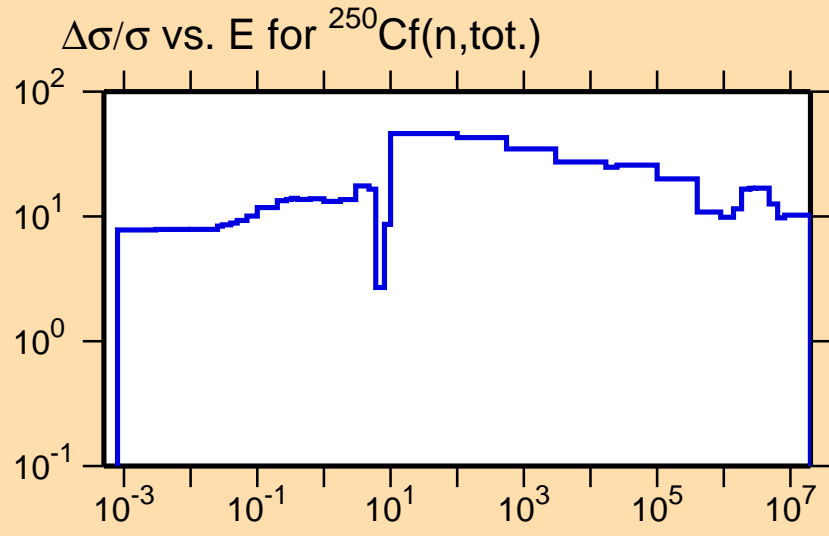




Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

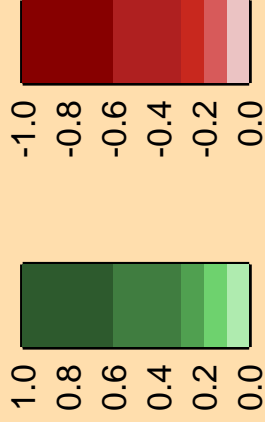
Warning: some uncertainty
data were suppressed.

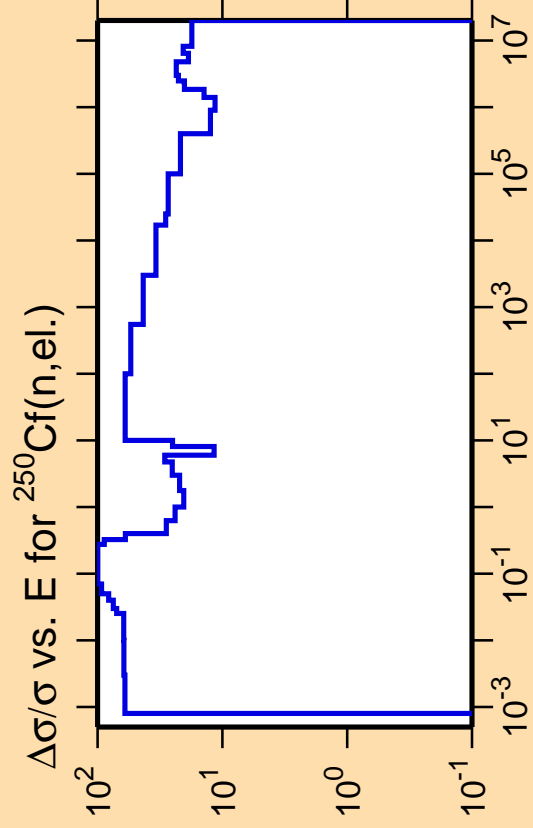


$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{tot.})$



Correlation Matrix

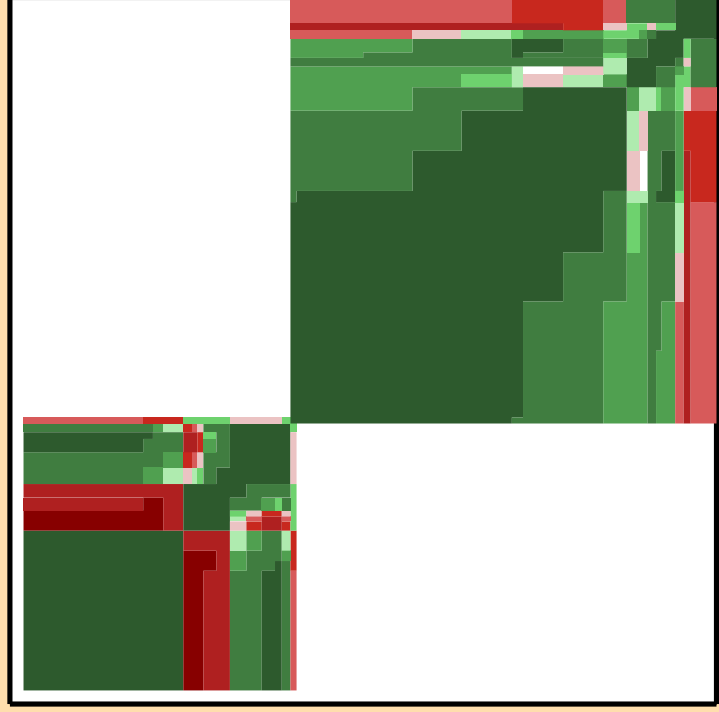
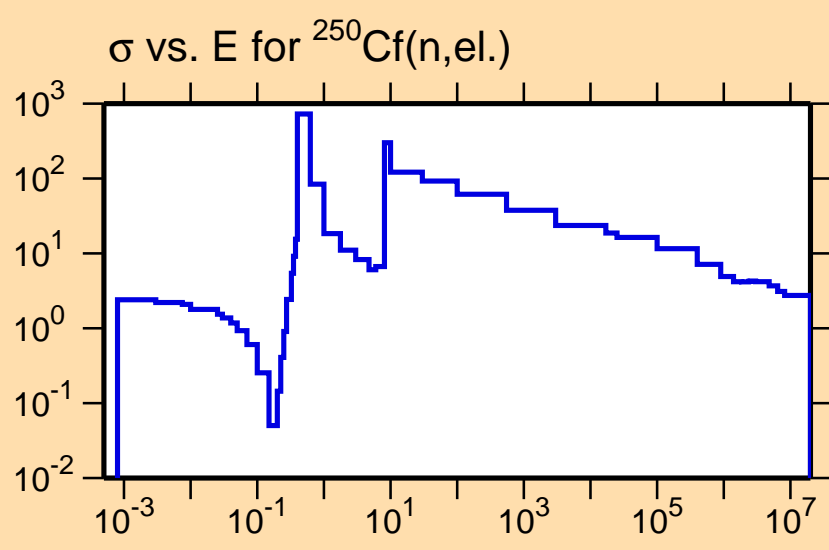




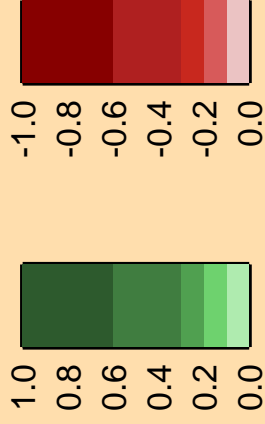
Ordinate scales are % relative standard deviation and barns.

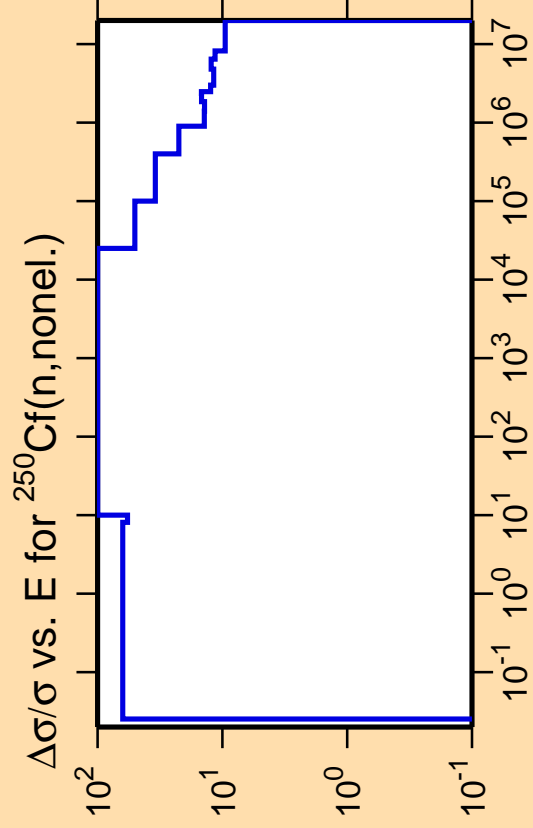
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

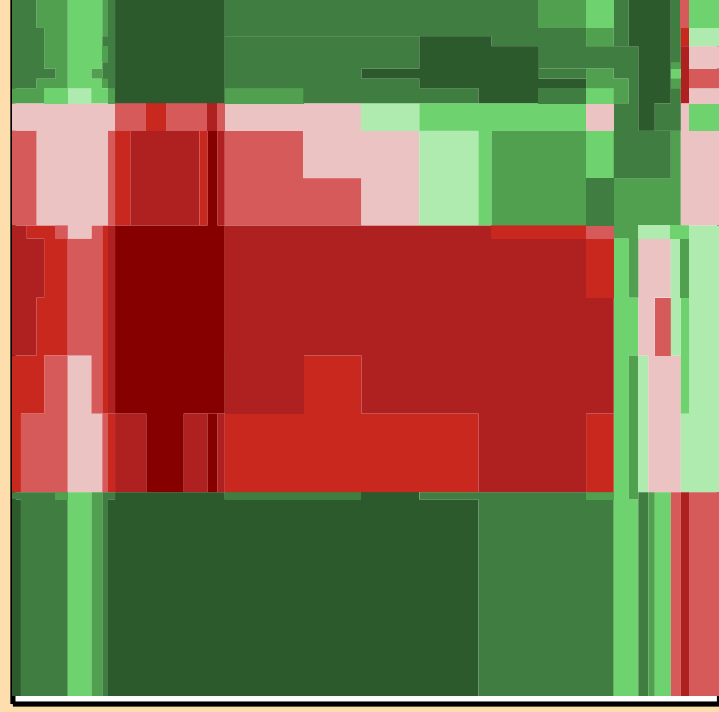
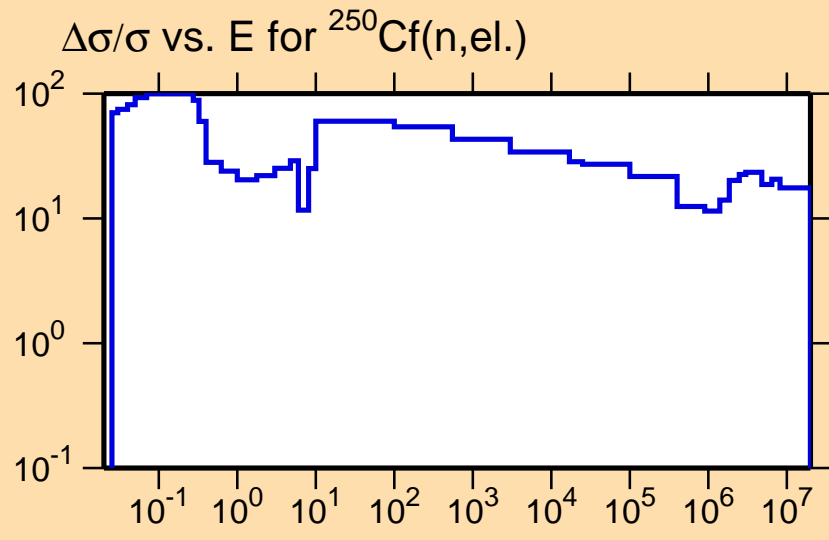




Ordinate scale is %
relative standard deviation.

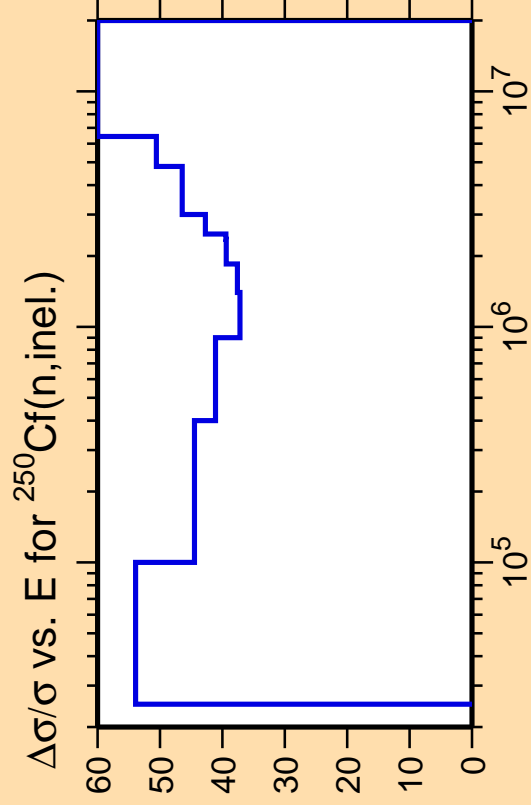
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

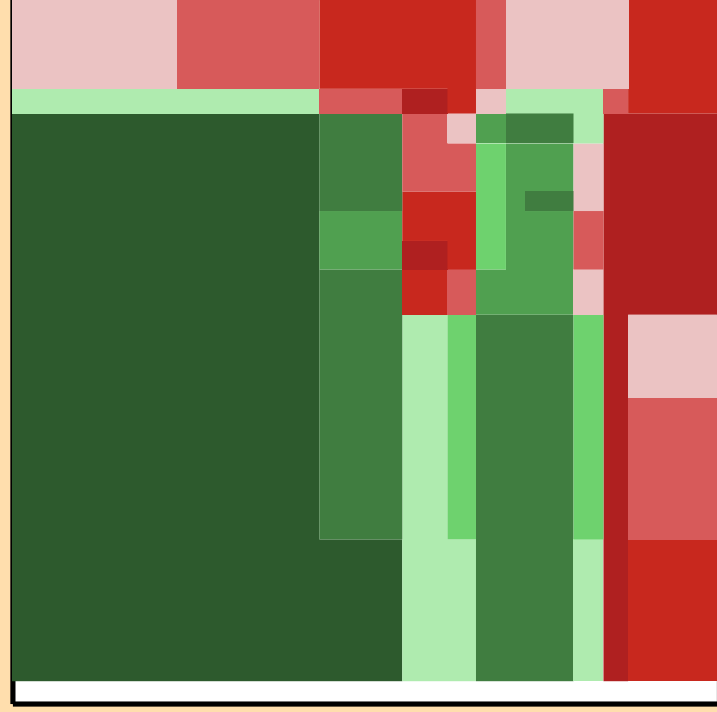
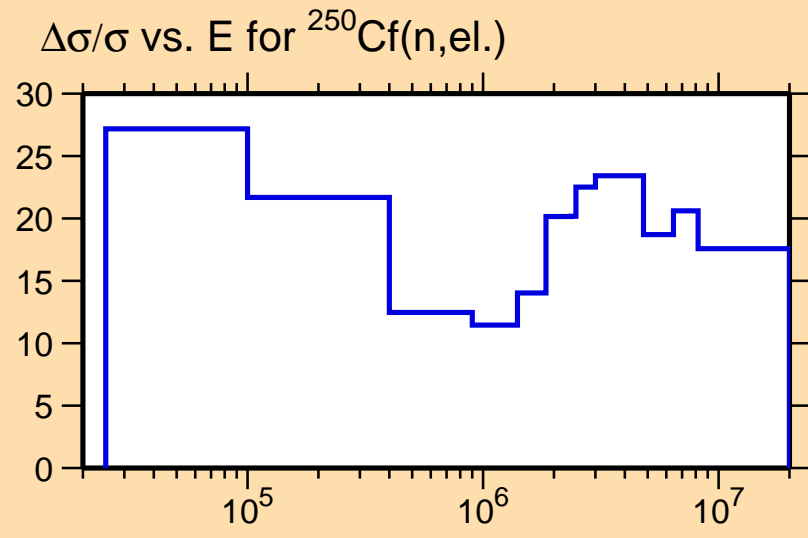




Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

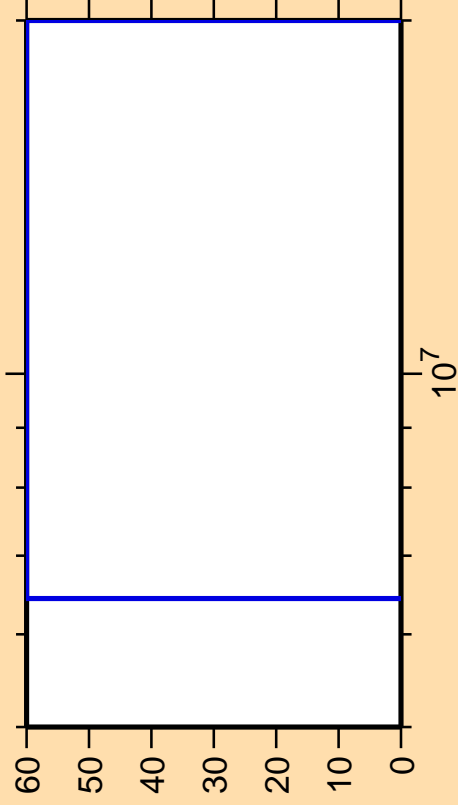
Warning: some uncertainty
data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$

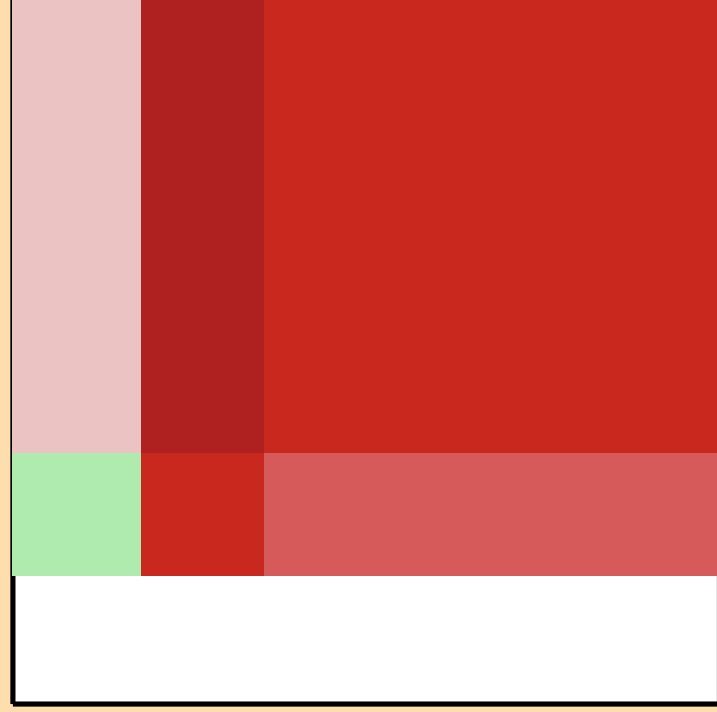
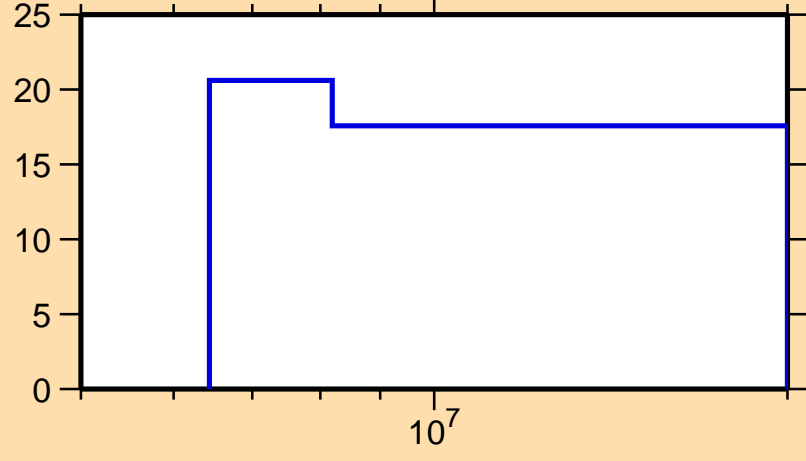


Ordinate scale is %
relative standard deviation.

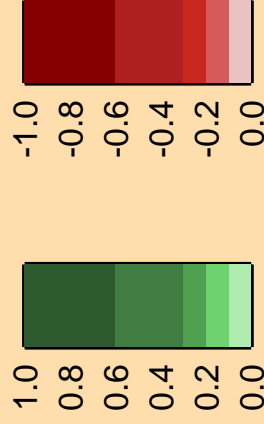
Abscissa scales are energy (eV).

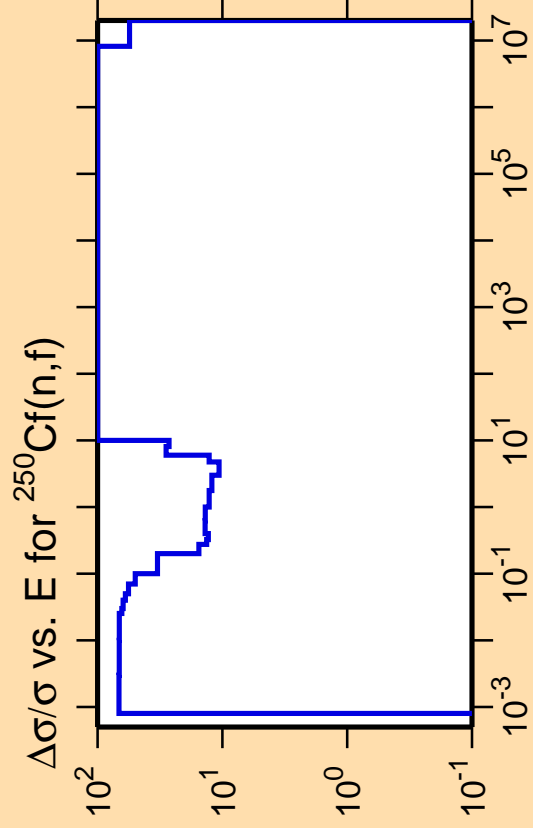
Warning: some uncertainty
data were suppressed.

$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{el.})$



Correlation Matrix

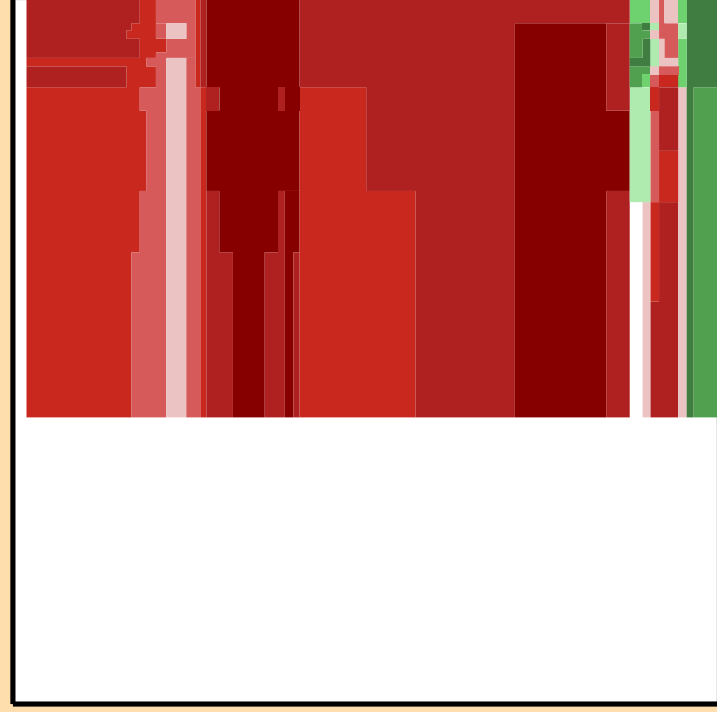
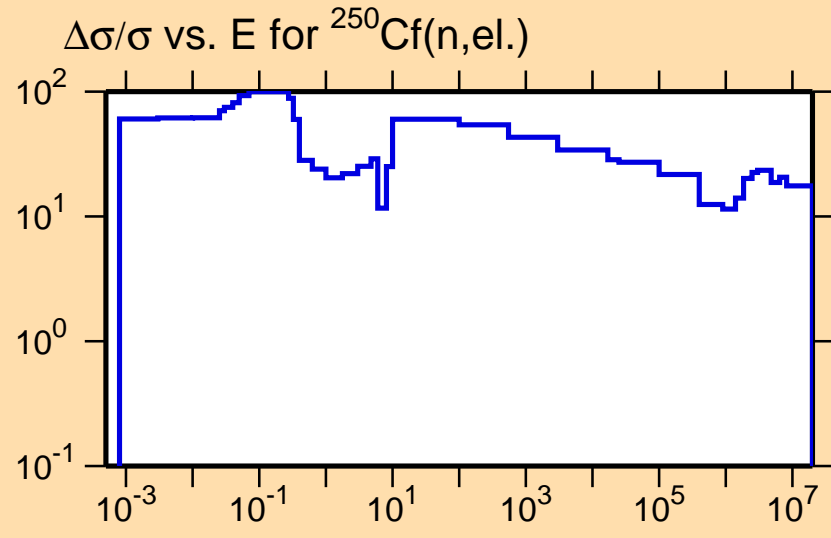




Ordinate scale is %
relative standard deviation.

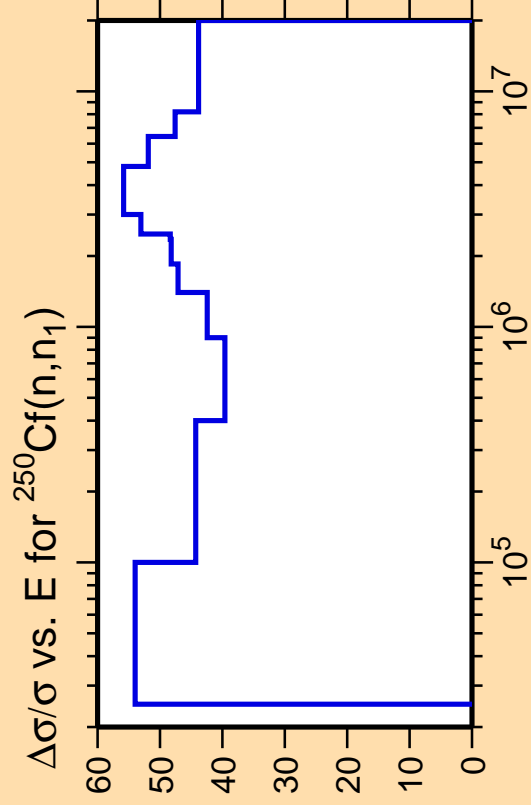
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



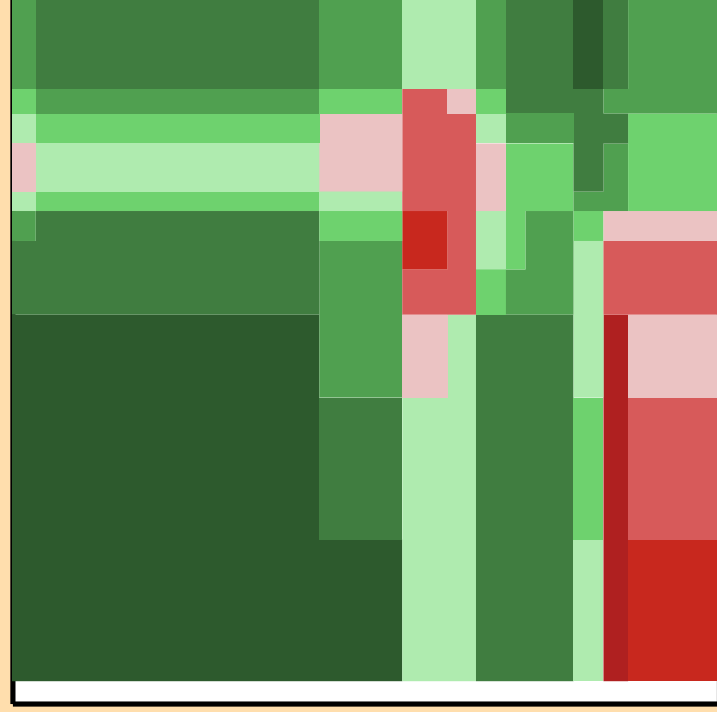
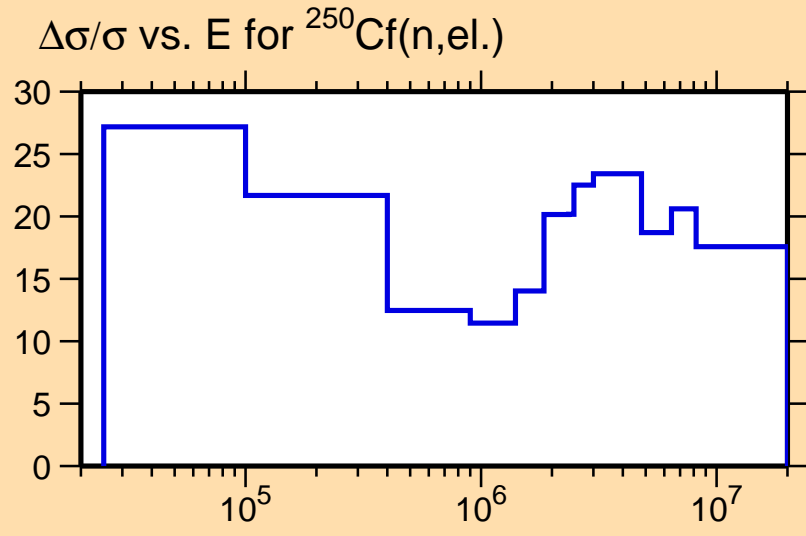
Correlation Matrix





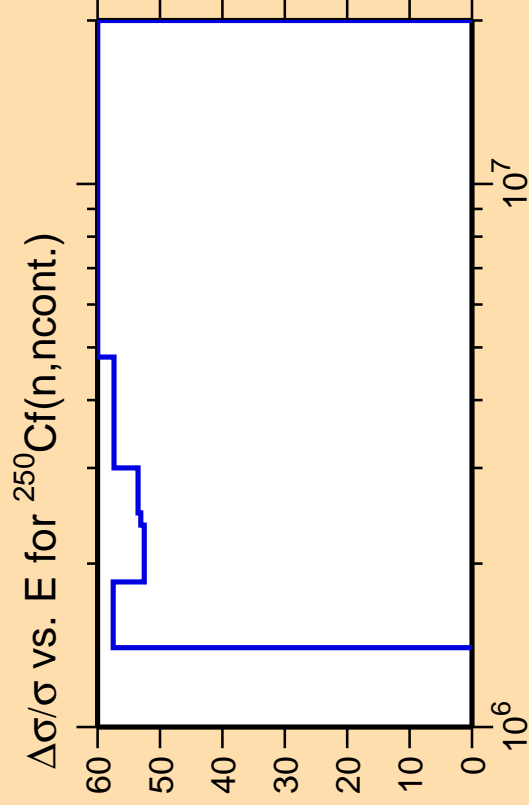
Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).



Correlation Matrix

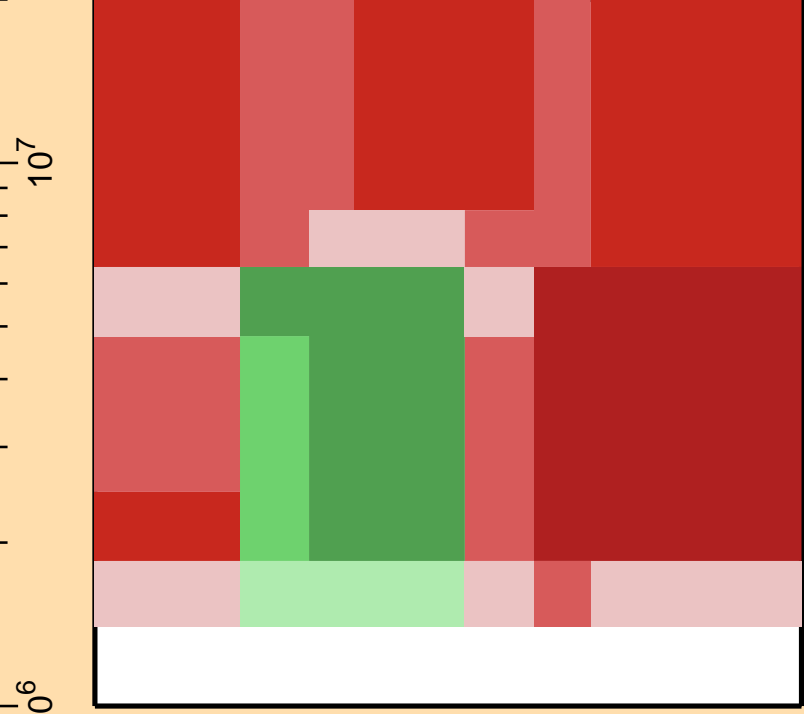
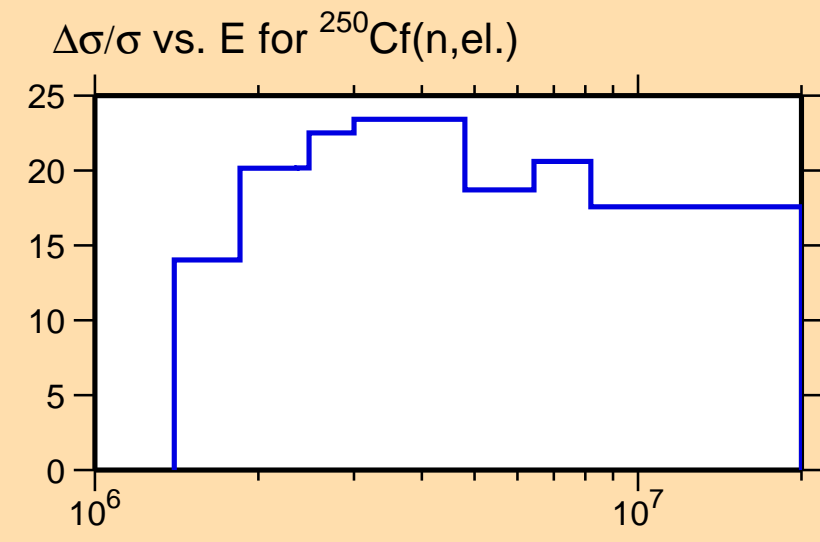




Ordinate scale is %
relative standard deviation.

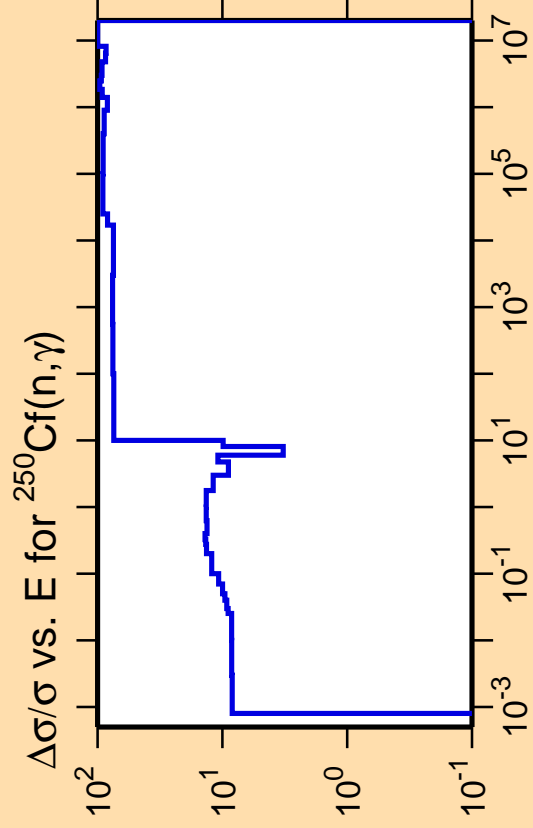
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

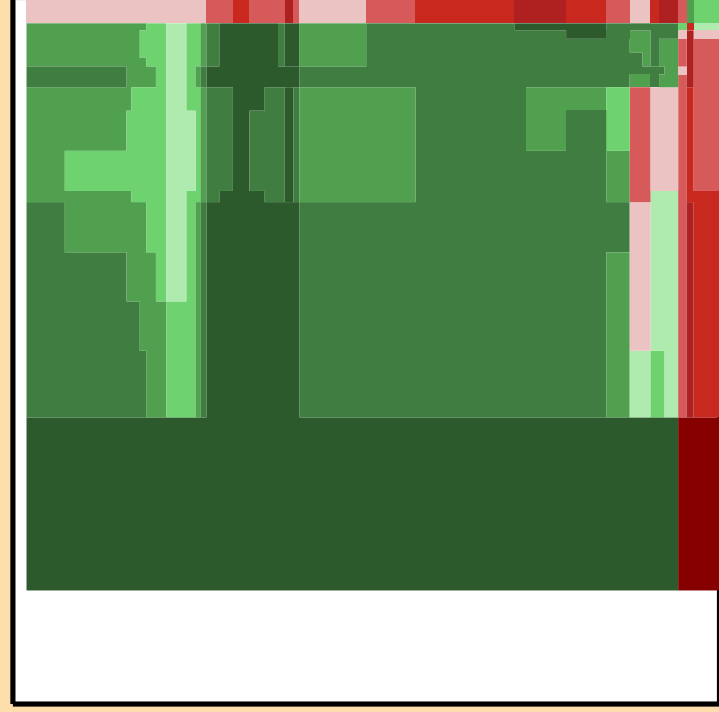
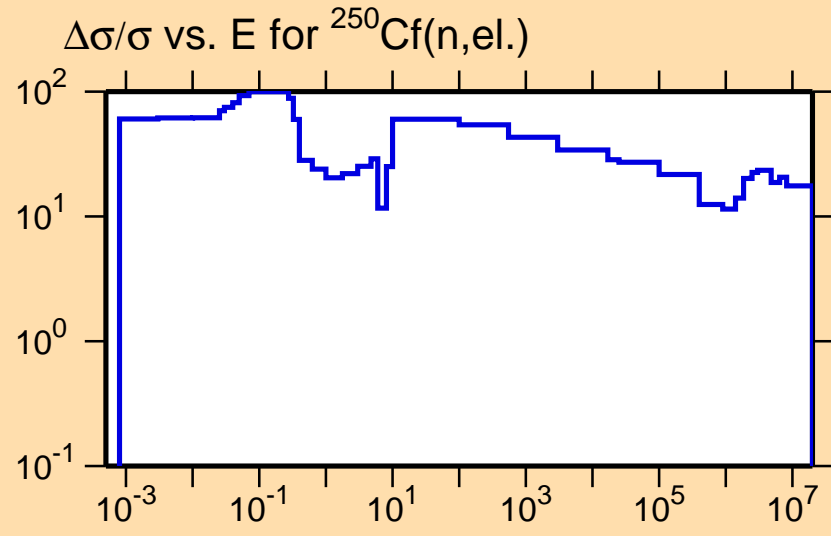




Ordinate scale is %
relative standard deviation.

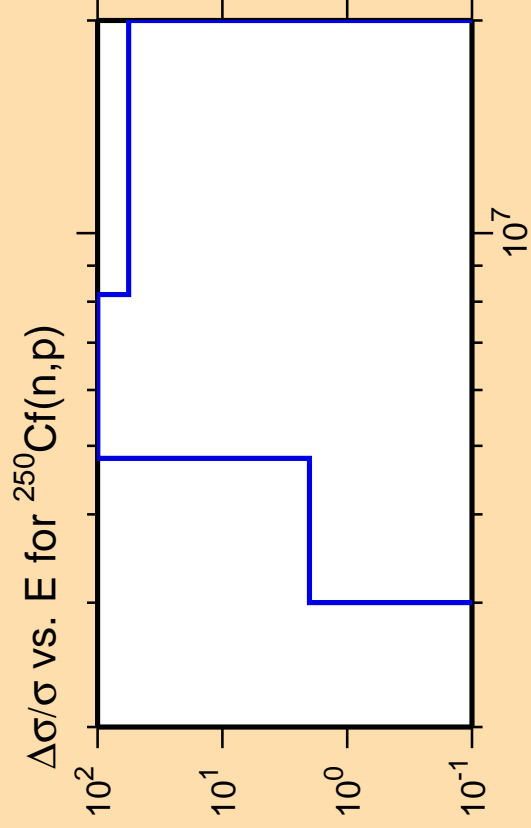
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

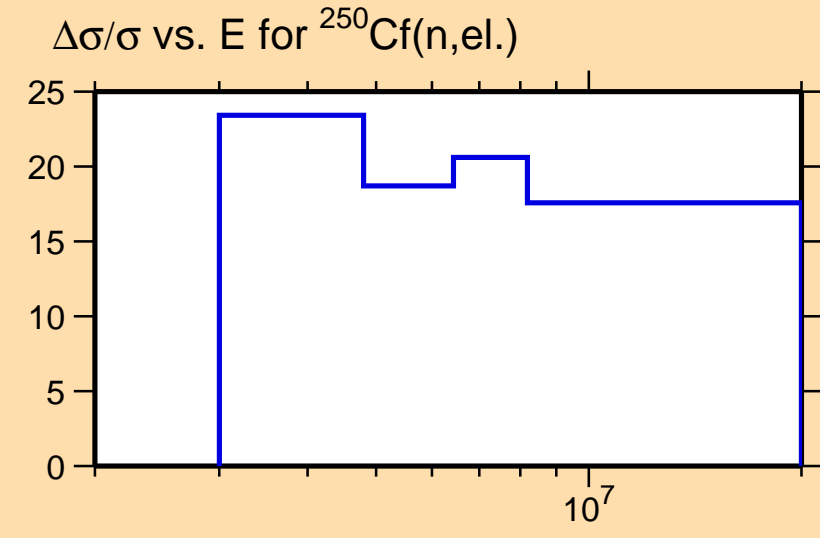




Ordinate scale is %
relative standard deviation.

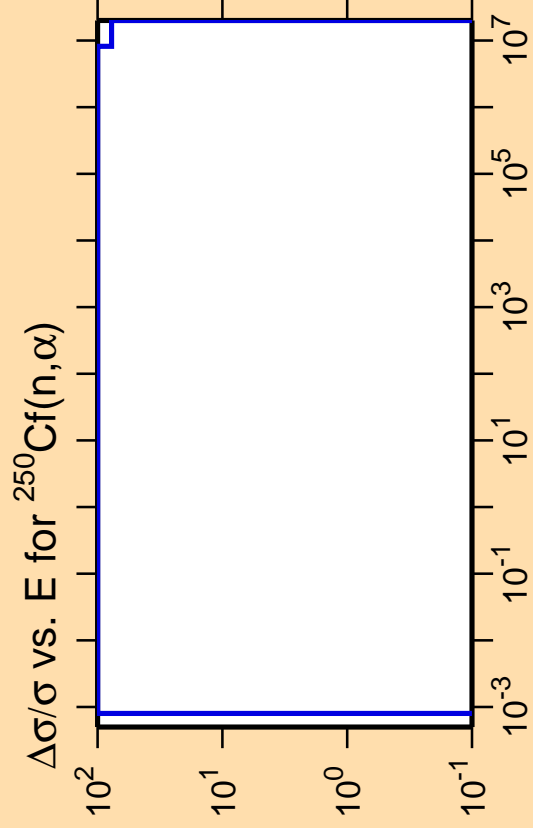
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

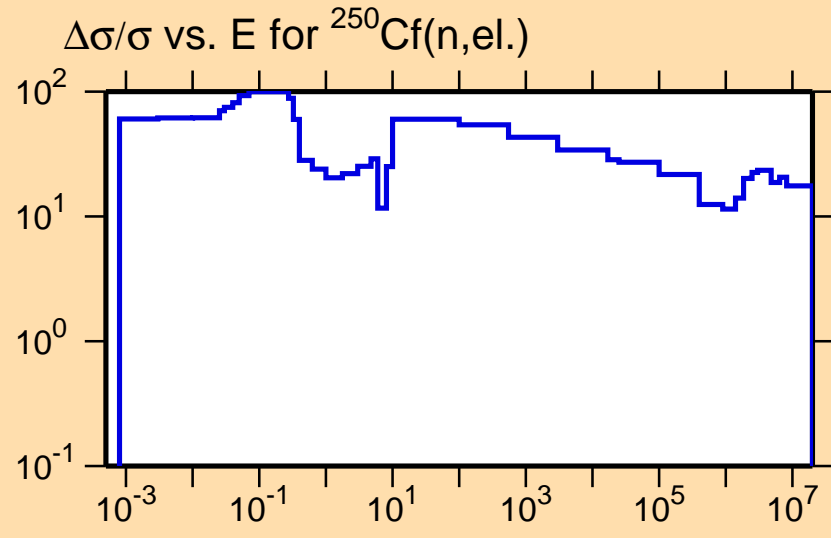




Ordinate scale is %
relative standard deviation.

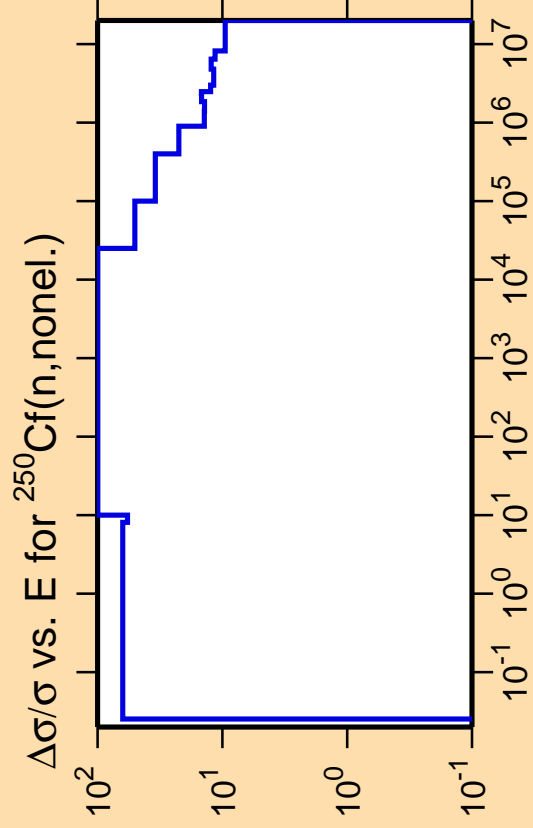
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

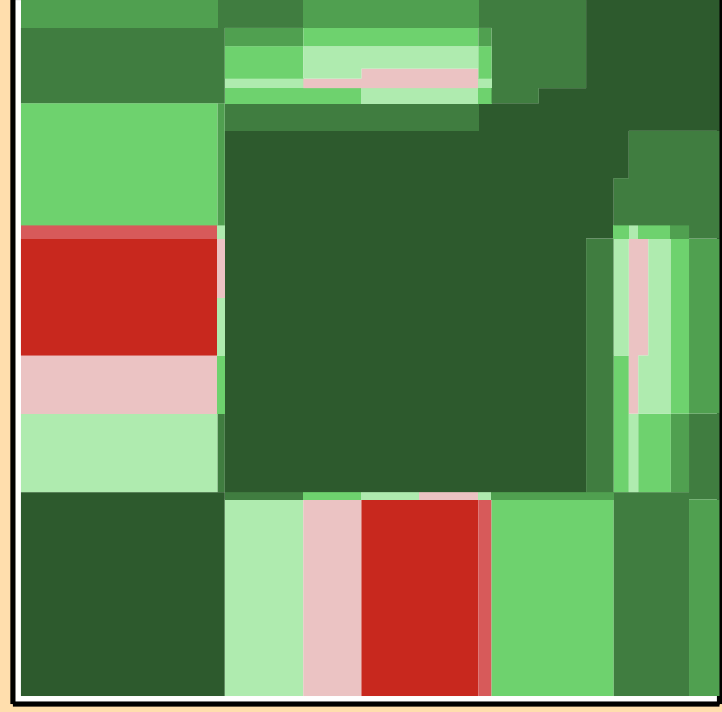
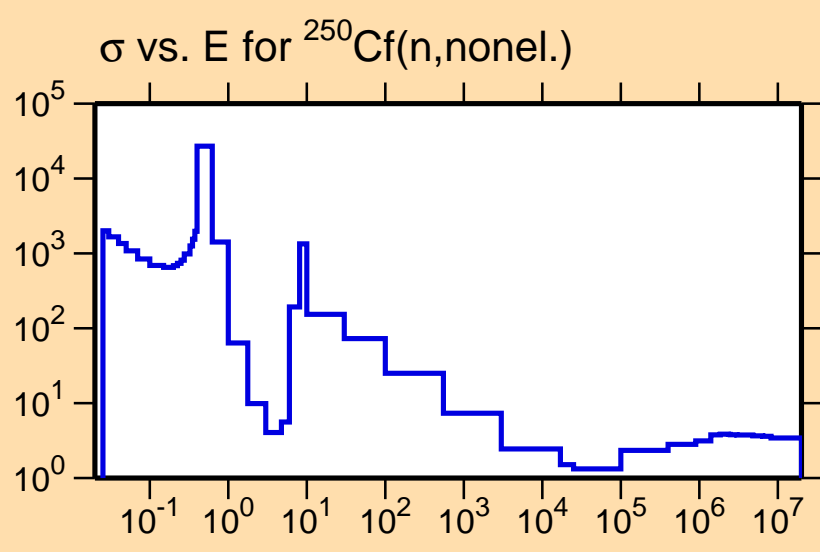




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

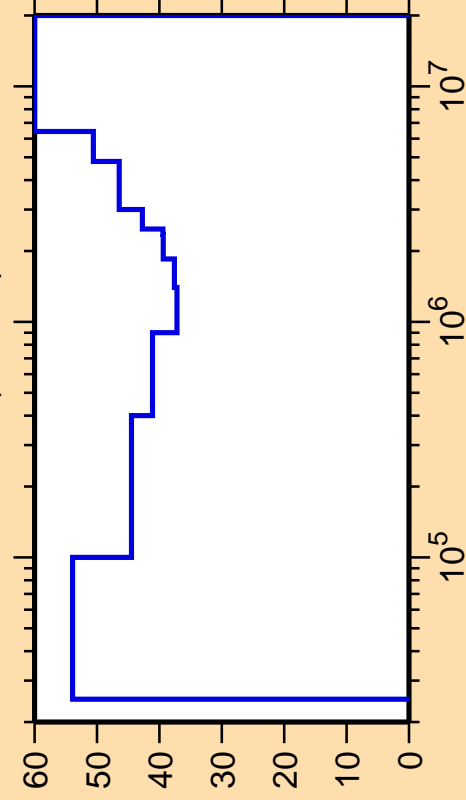
Warning: some uncertainty data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{inel.})$

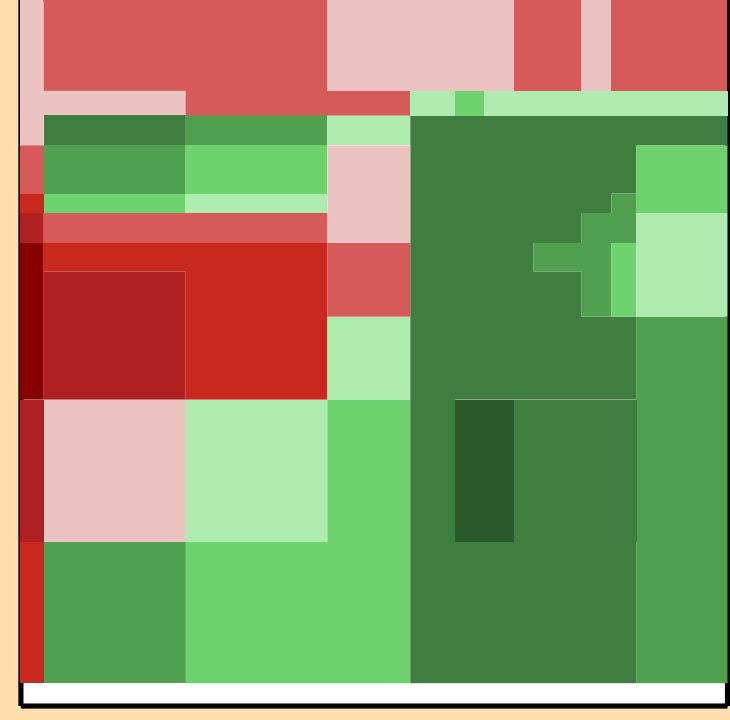
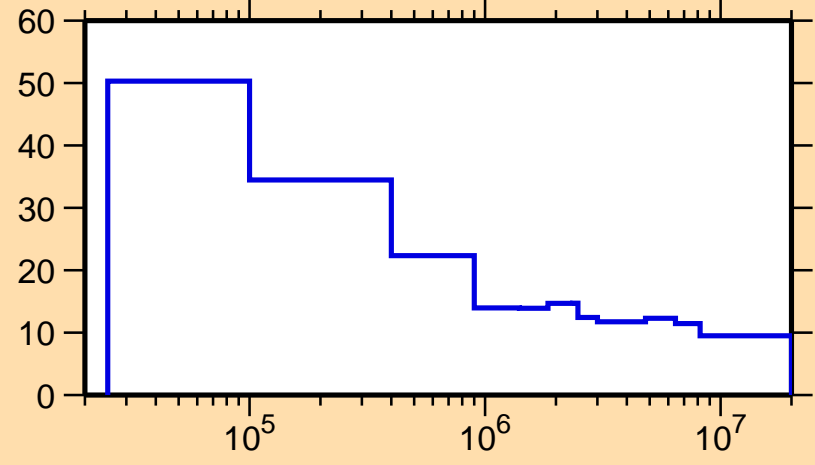


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

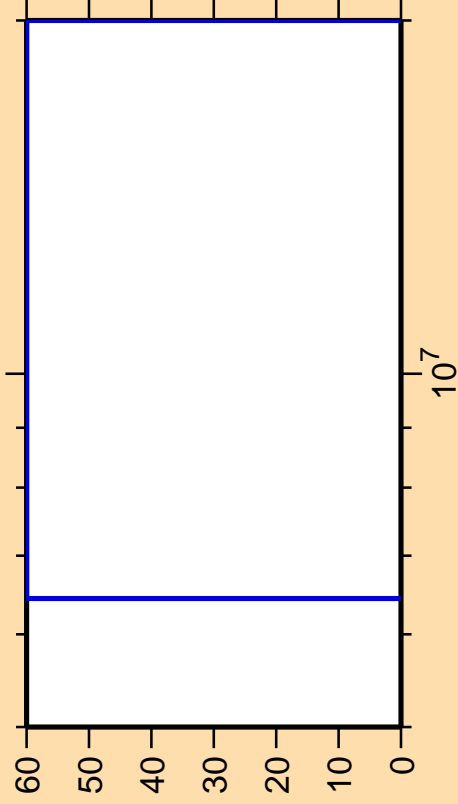
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{nonel.})$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$

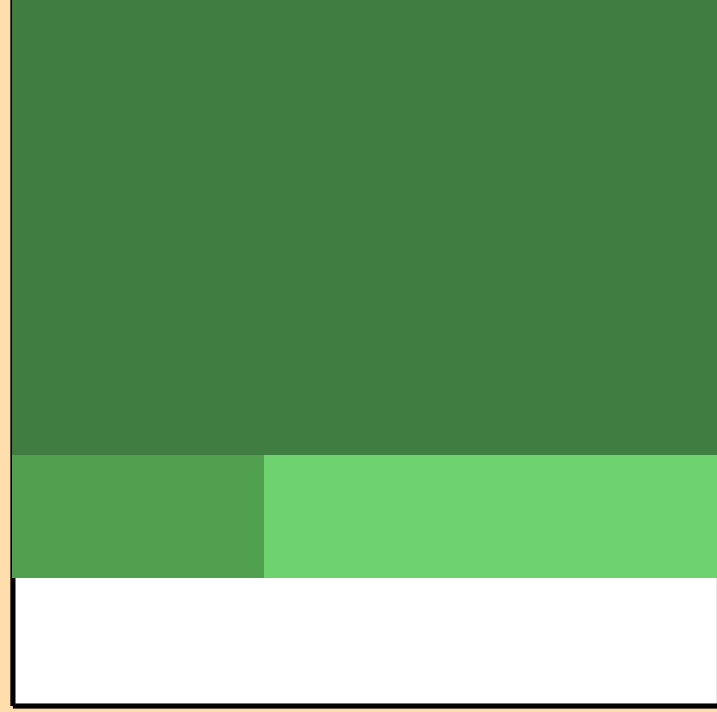
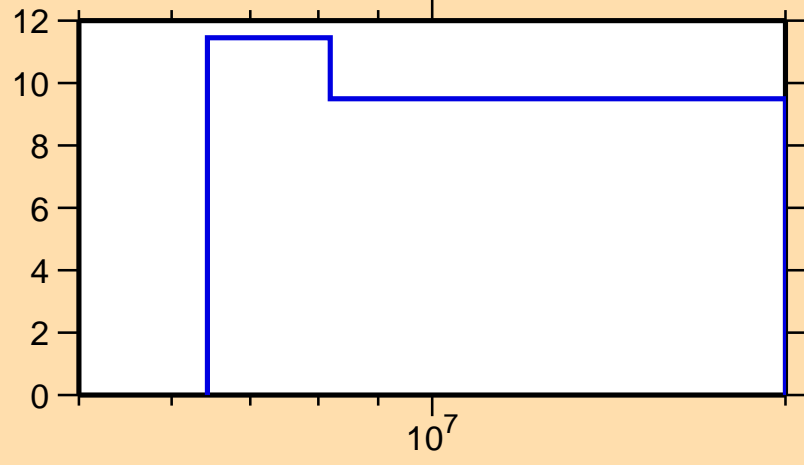


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

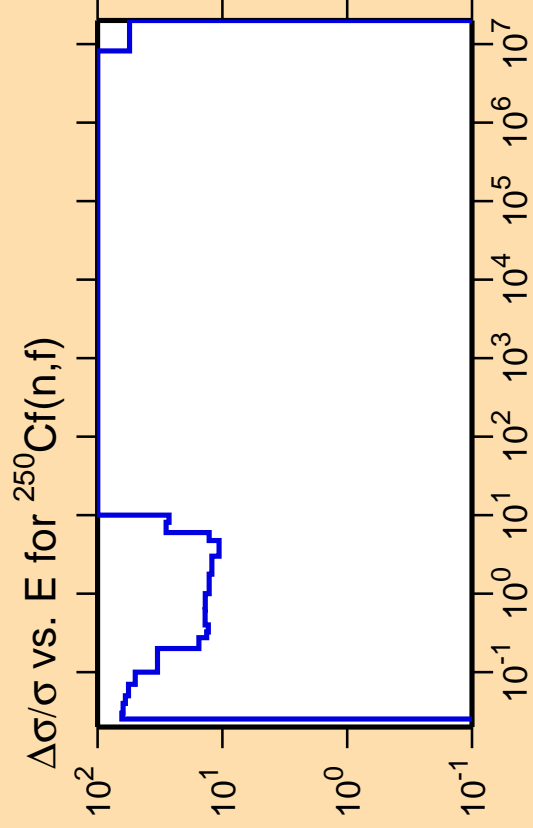
Warning: some uncertainty
data were suppressed.

$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{nonel.})$



Correlation Matrix

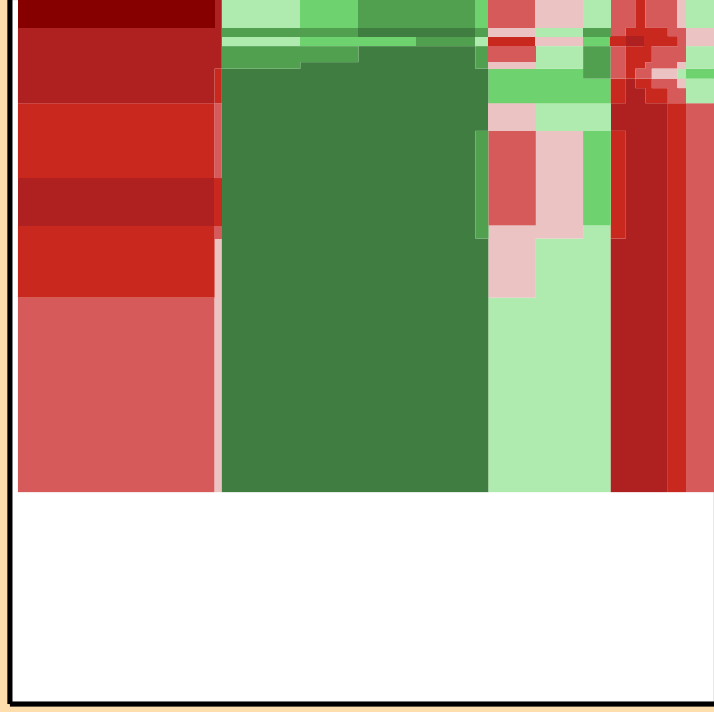
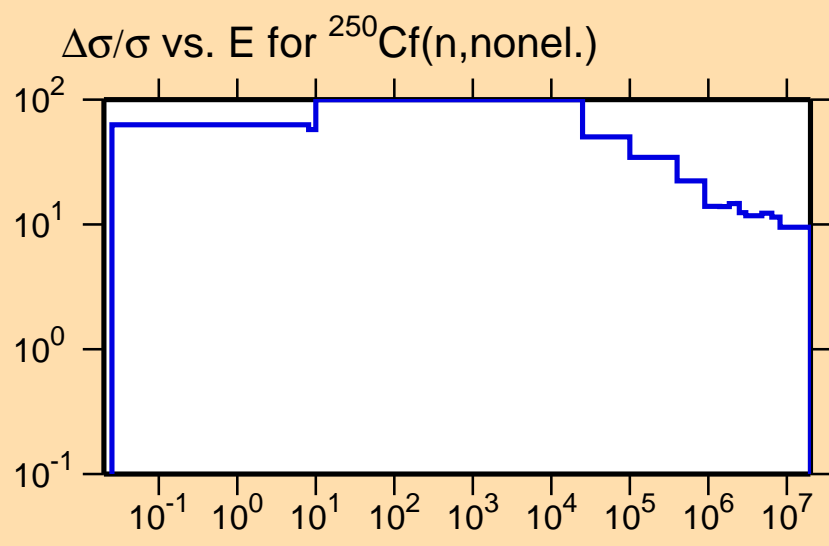




Ordinate scale is %
relative standard deviation.

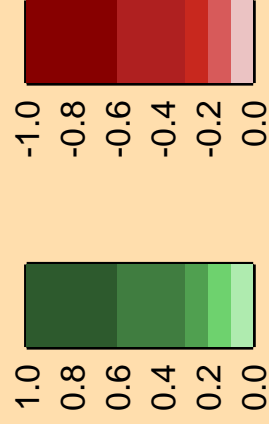
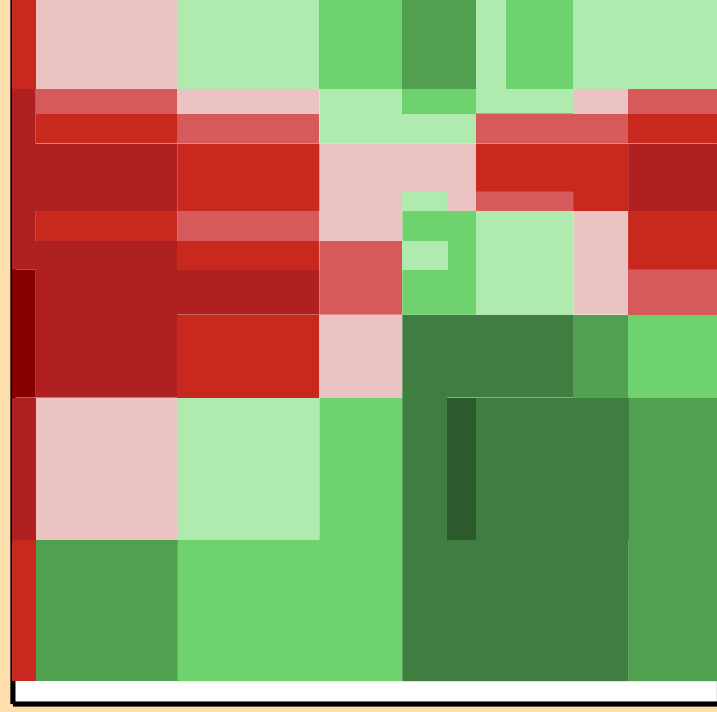
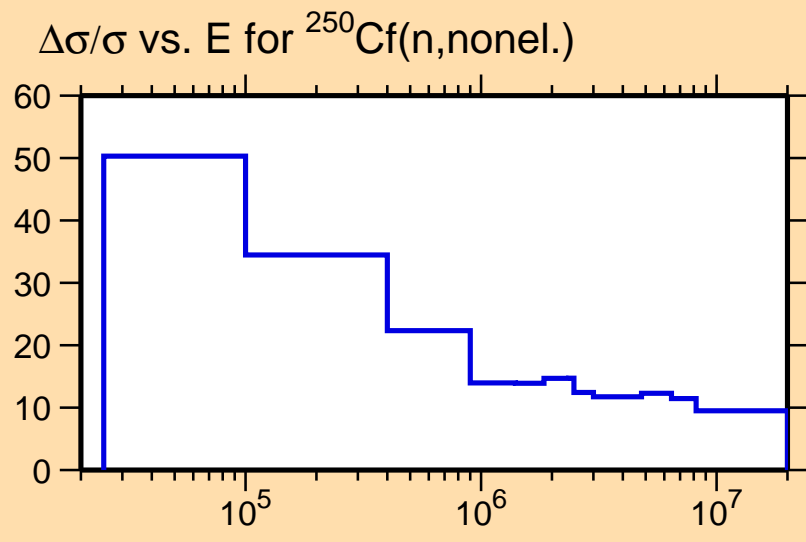
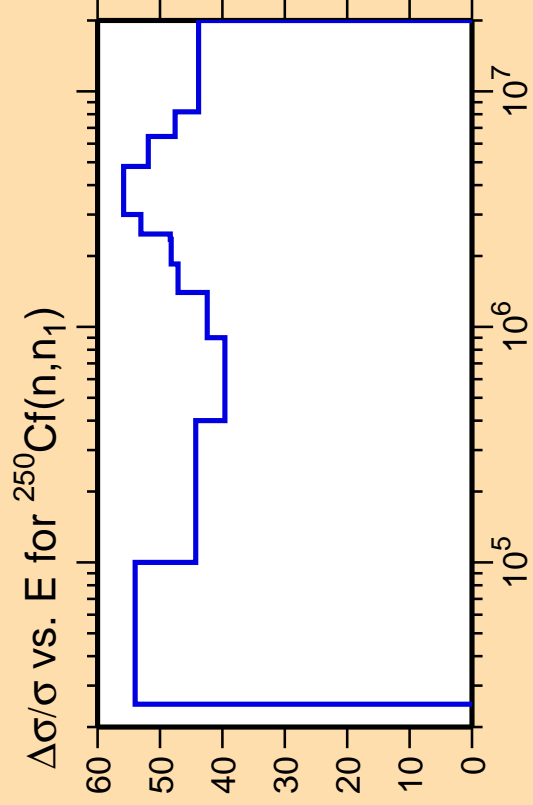
Abscissa scales are energy (eV).

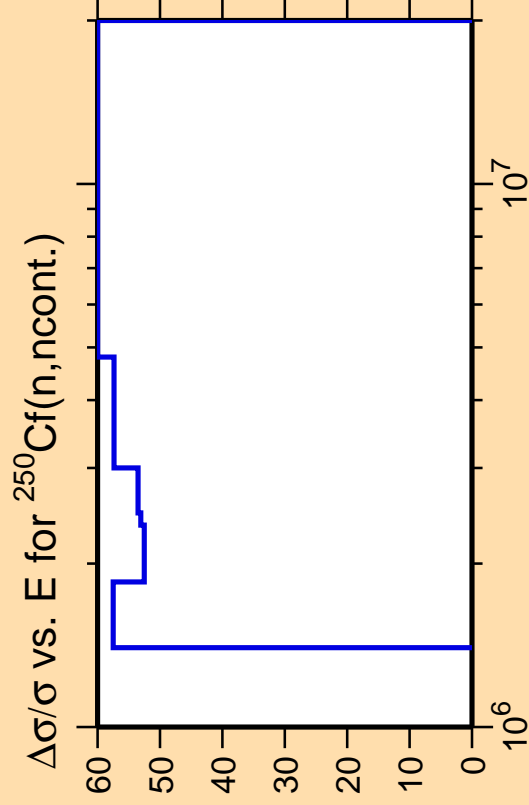
Warning: some uncertainty
data were suppressed.



Correlation Matrix



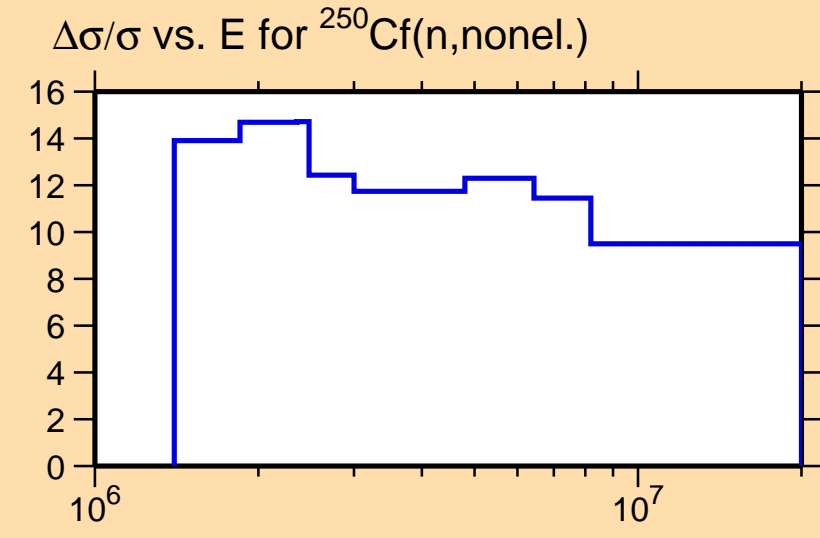




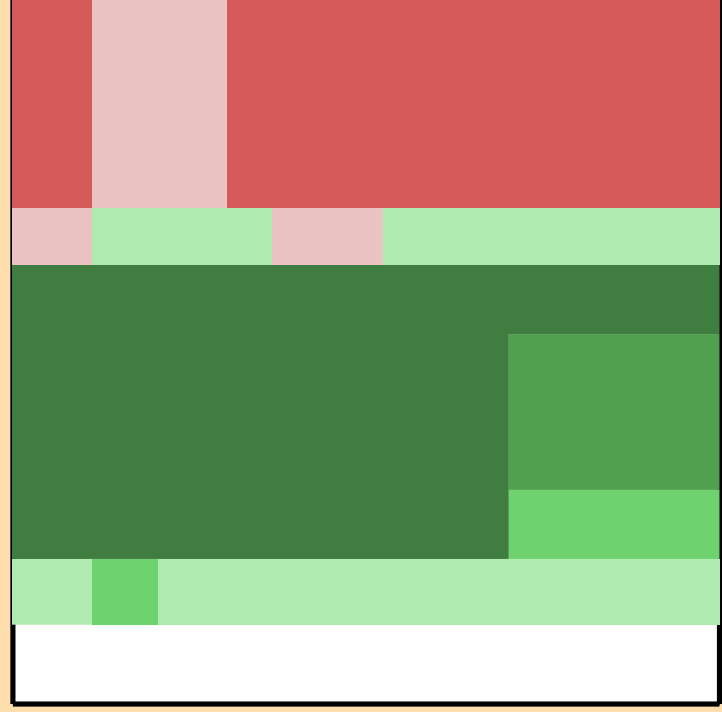
Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

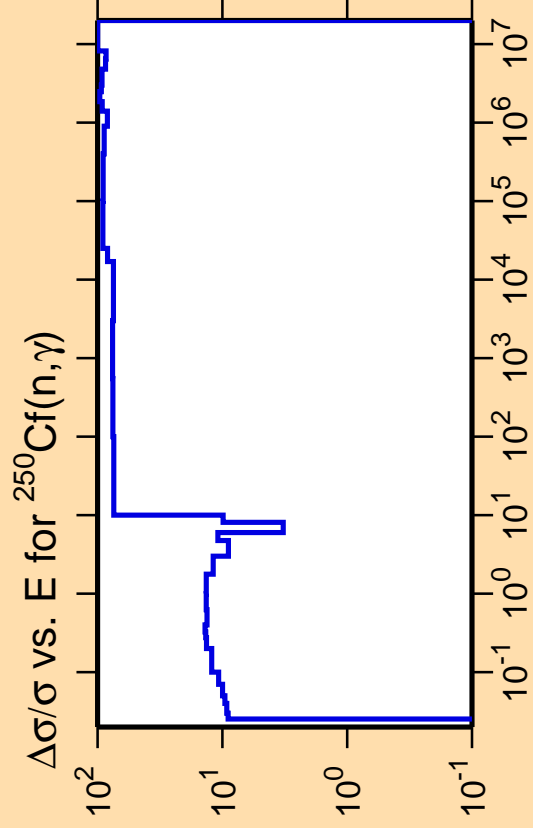


$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{nonel.})$



Correlation Matrix

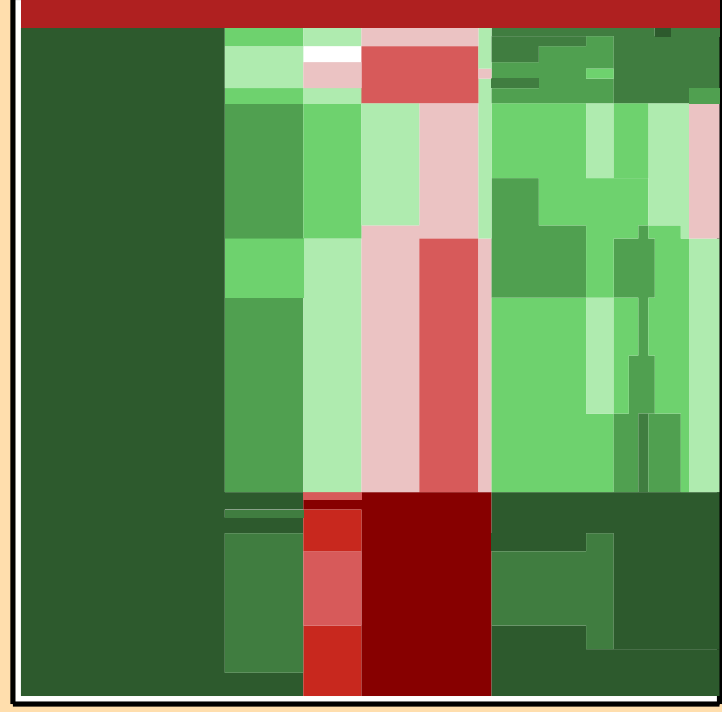
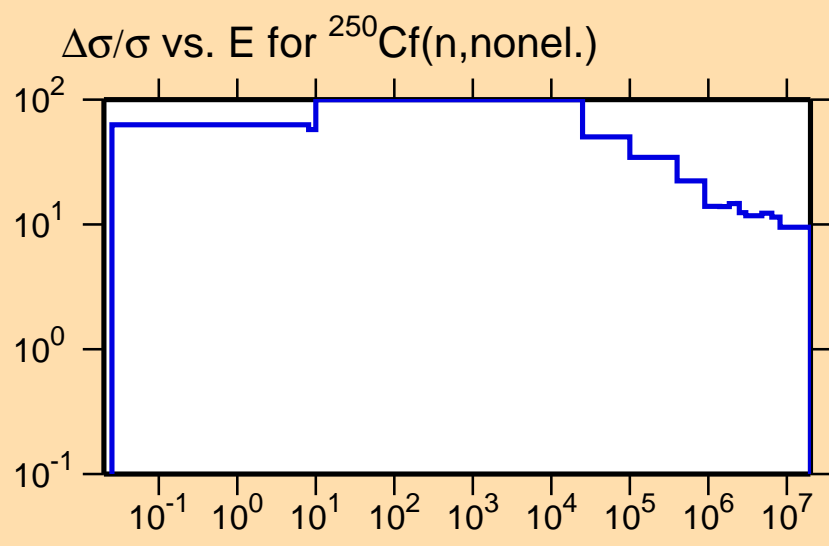




Ordinate scale is %
relative standard deviation.

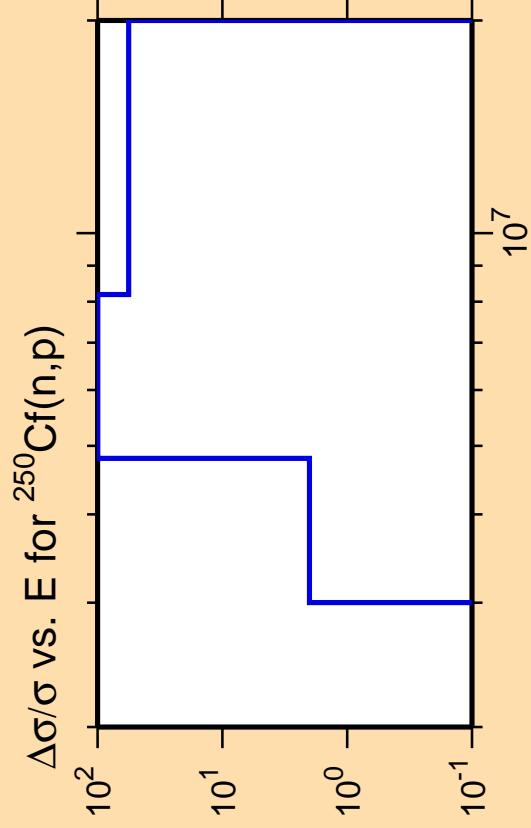
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

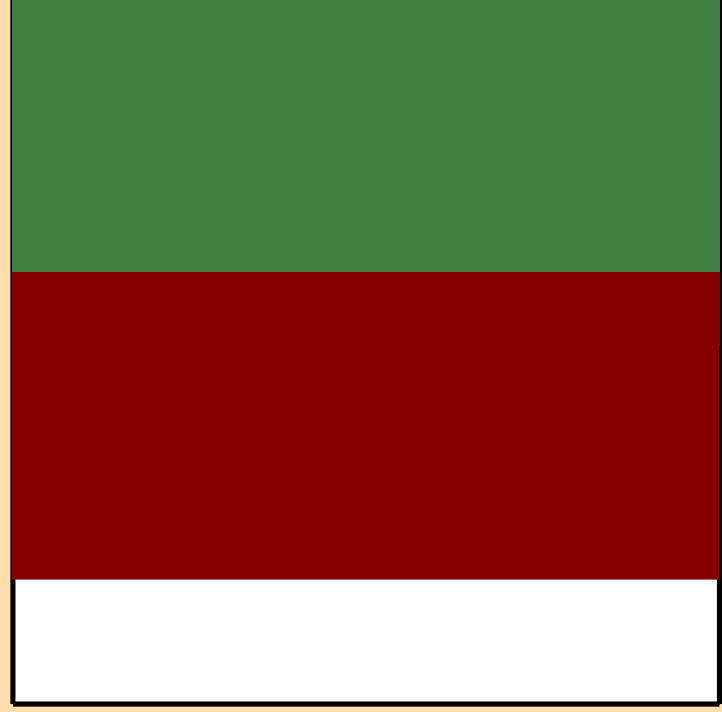
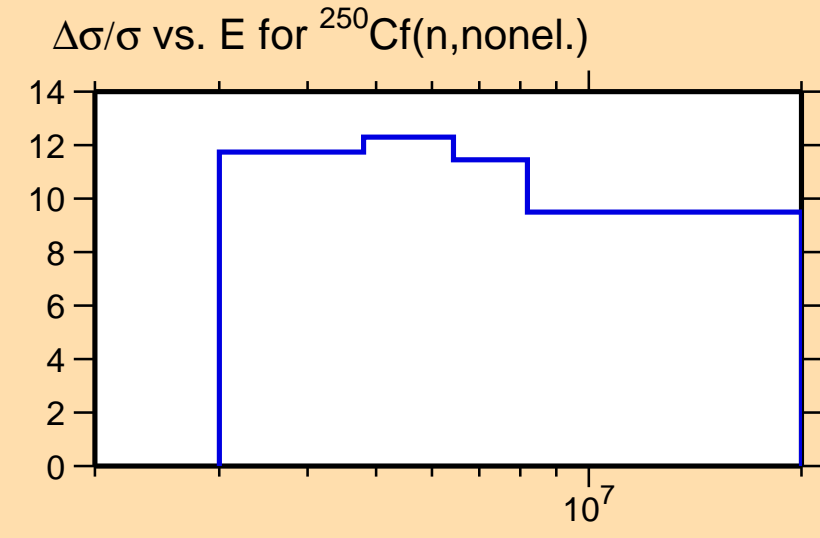




Ordinate scale is %
relative standard deviation.

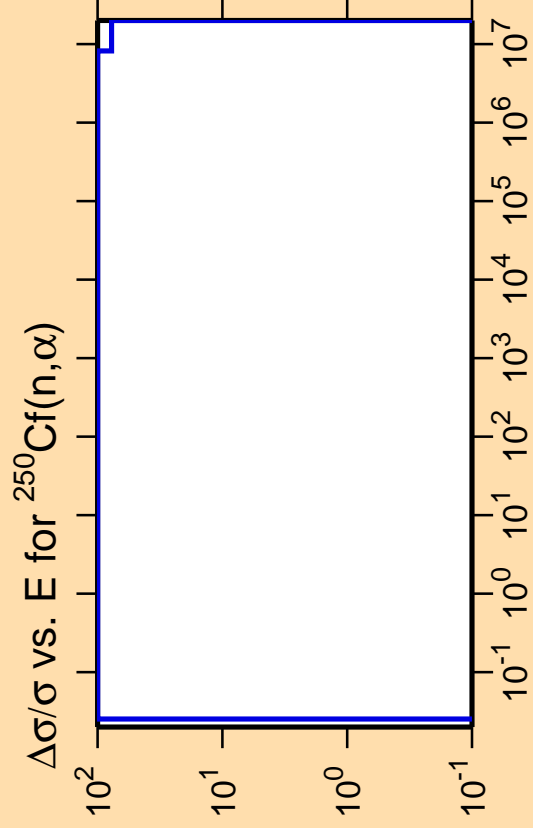
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

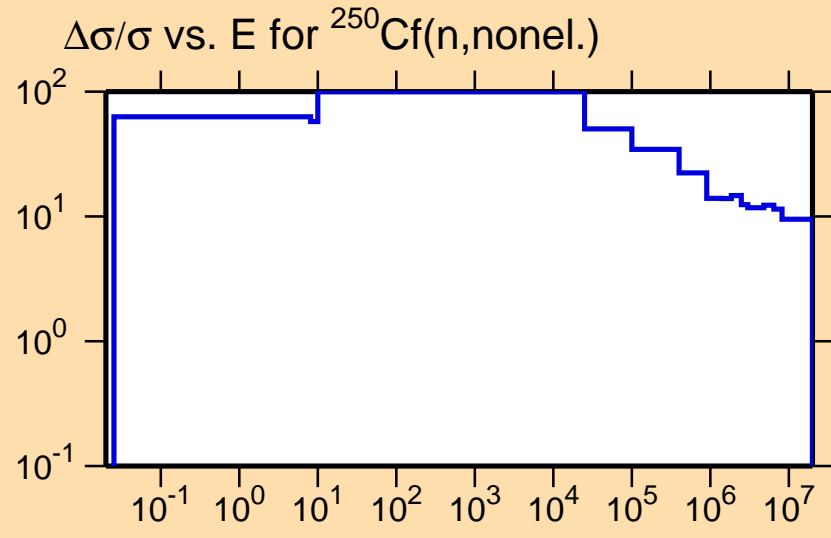




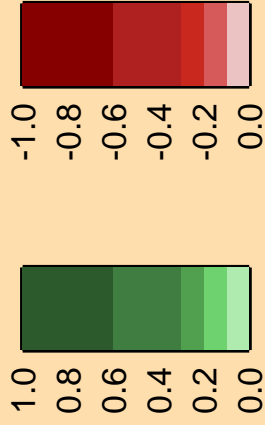
Ordinate scale is %
relative standard deviation.

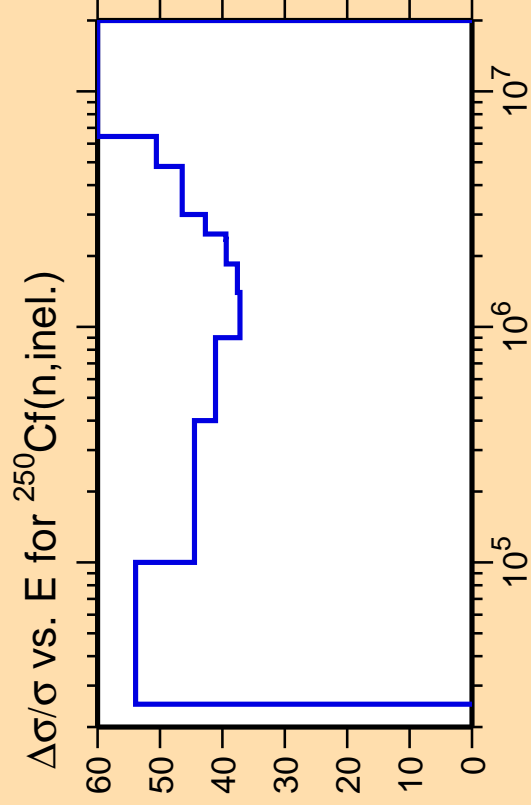
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

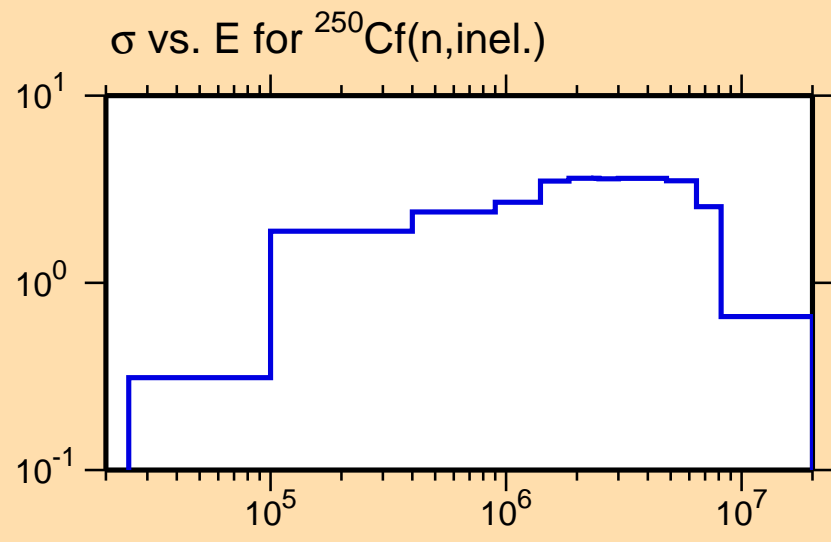




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

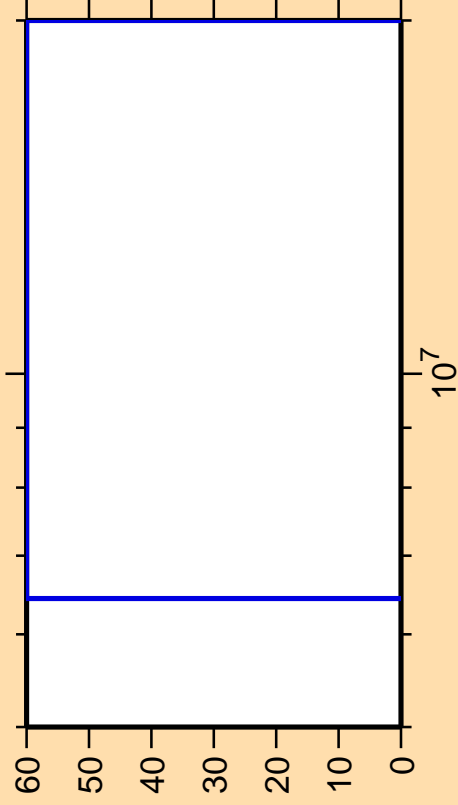
Warning: some uncertainty data were suppressed.



Correlation Matrix



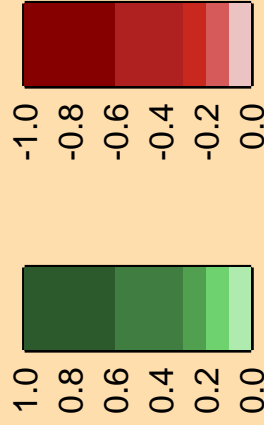
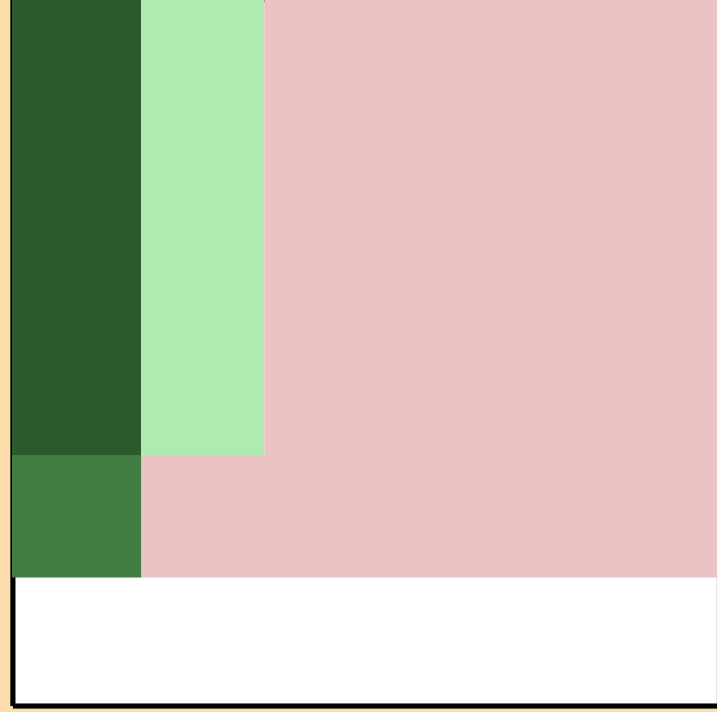
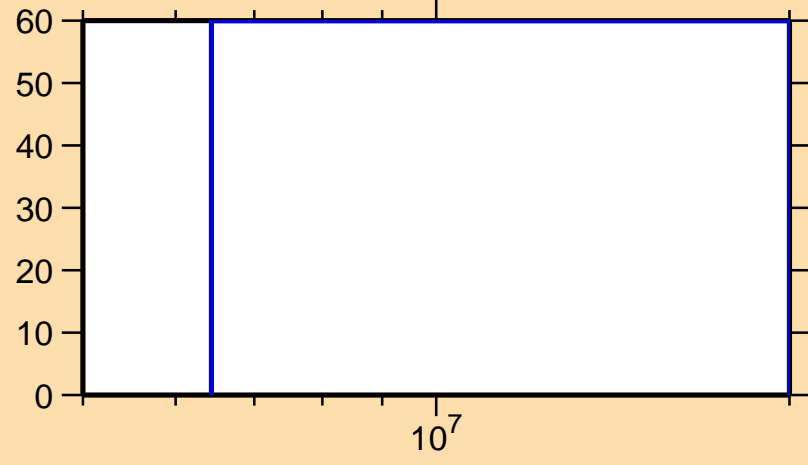
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$

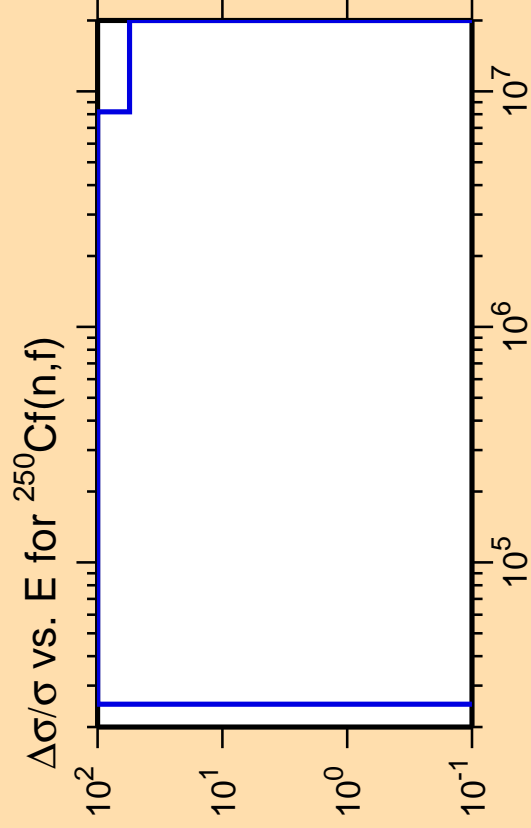


Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{inel.})$

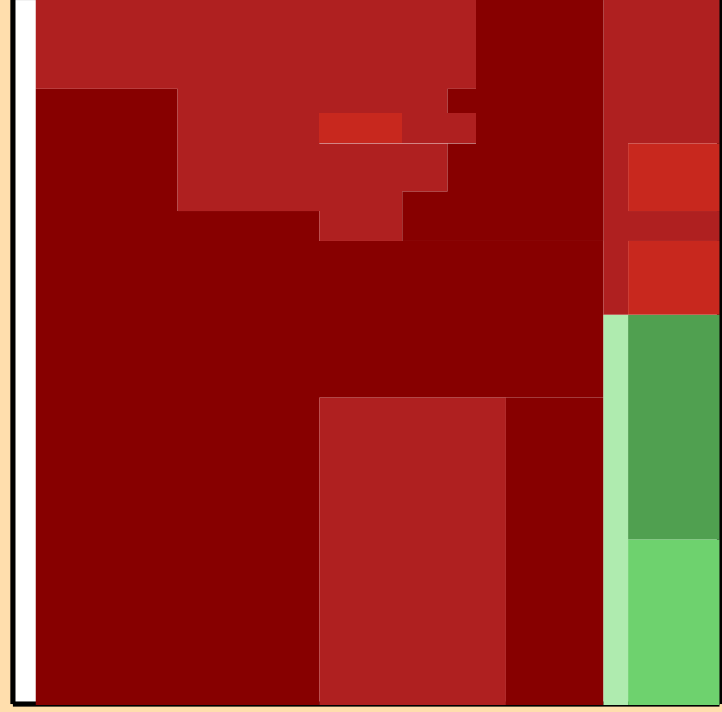
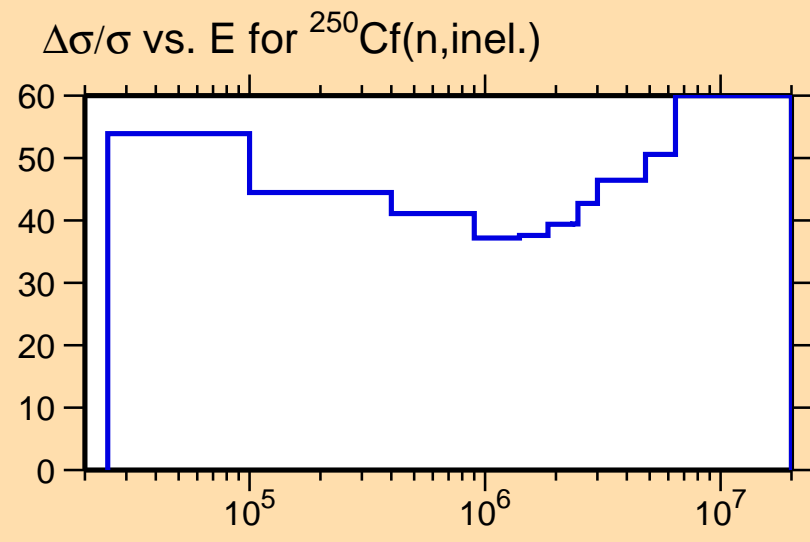




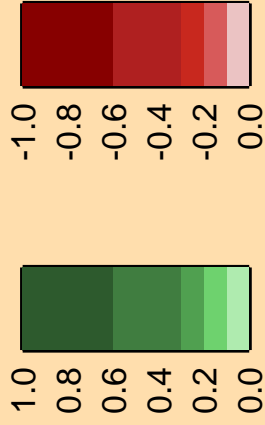
Ordinate scale is %
relative standard deviation.

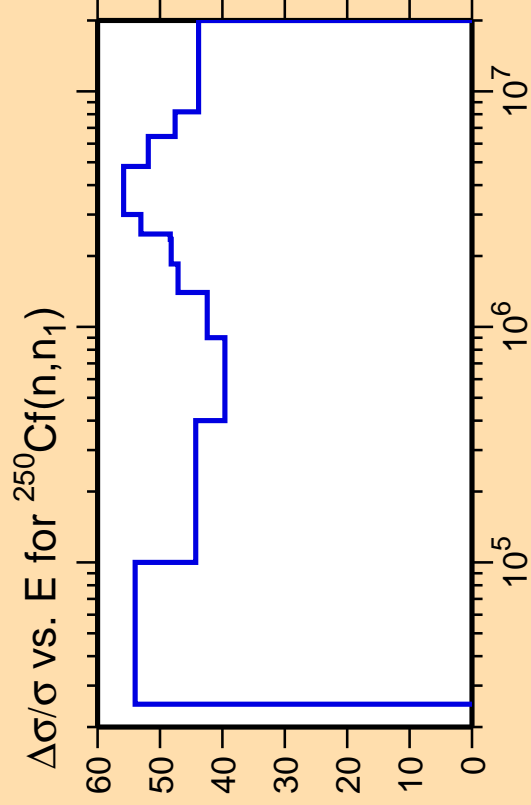
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

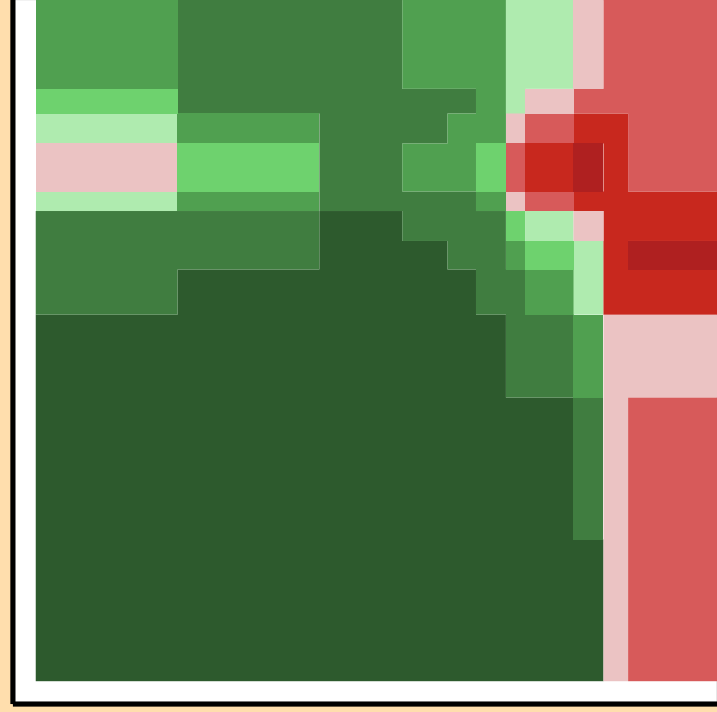
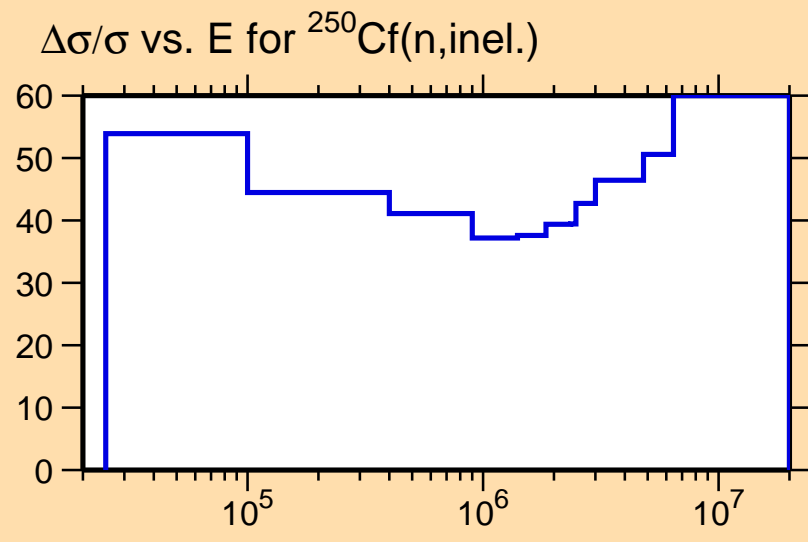




Ordinate scale is %
relative standard deviation.

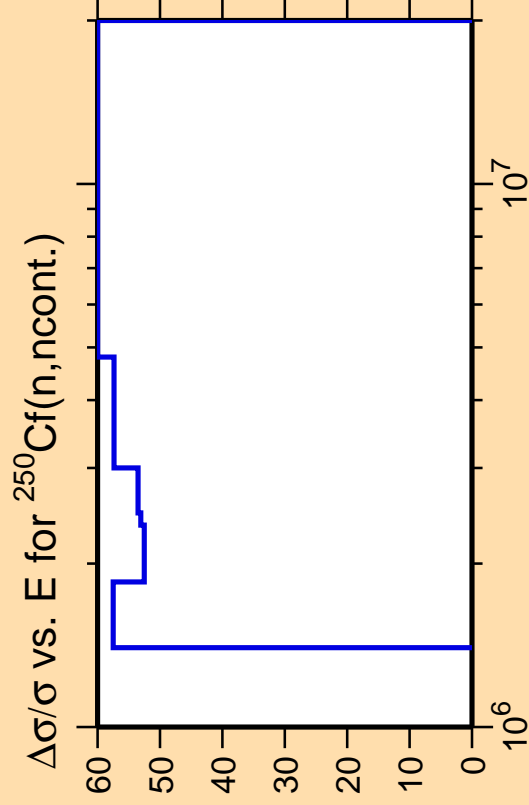
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

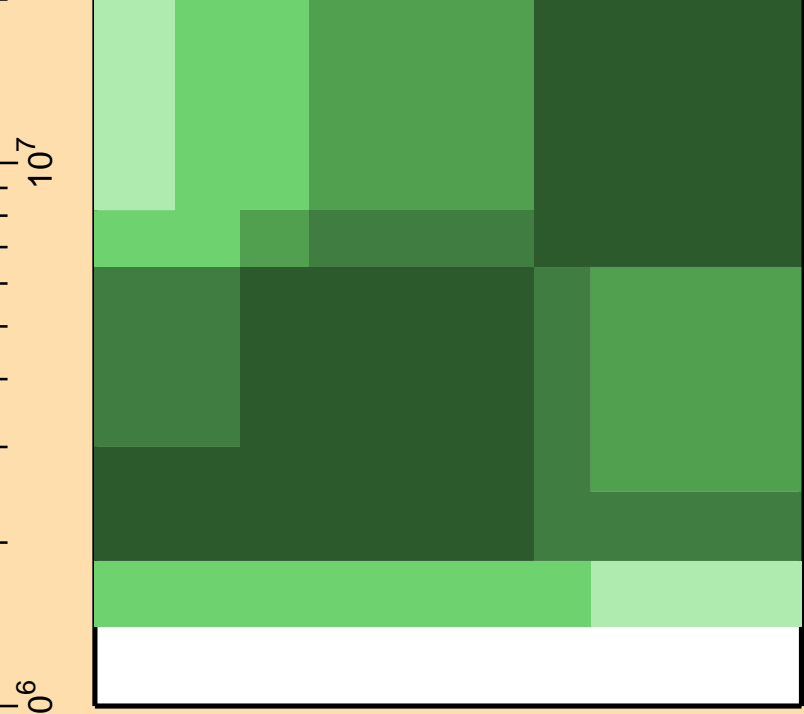
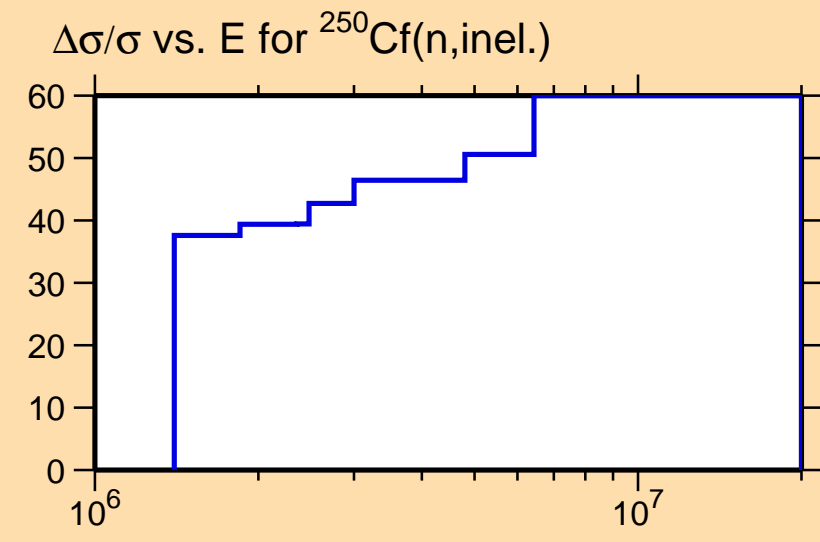




Ordinate scale is %
relative standard deviation.

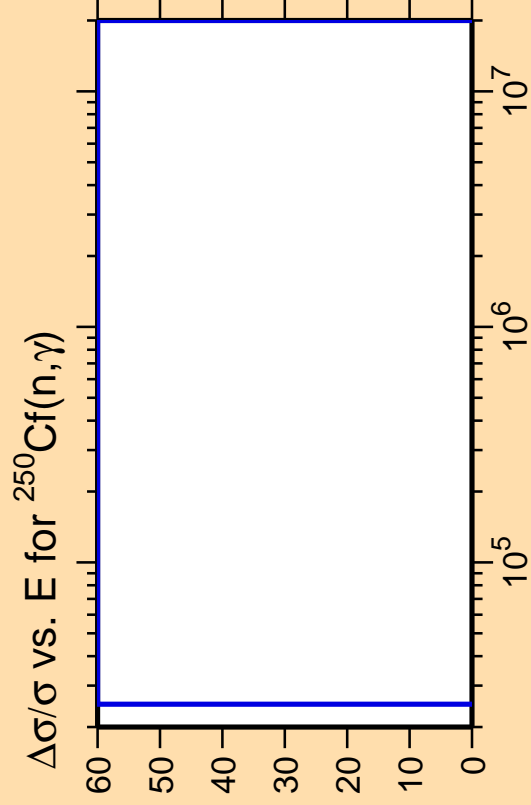
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

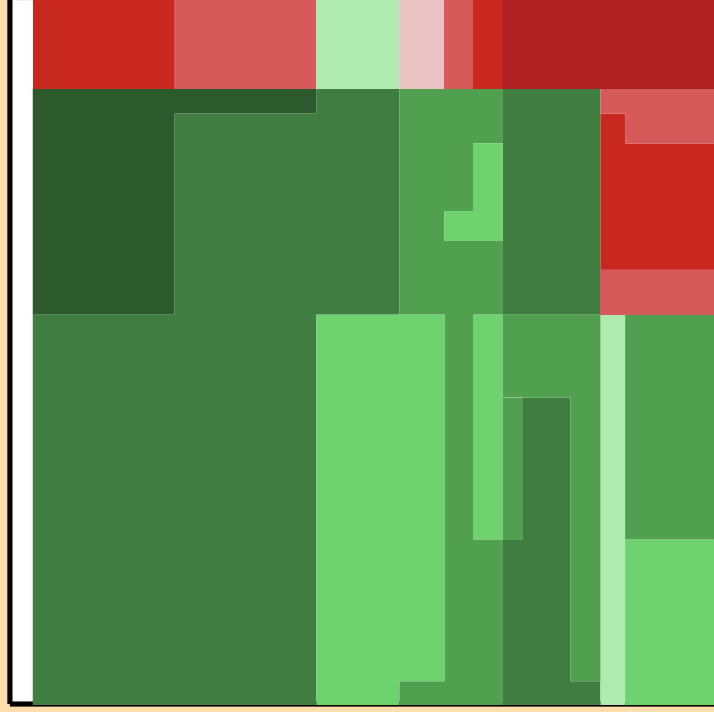
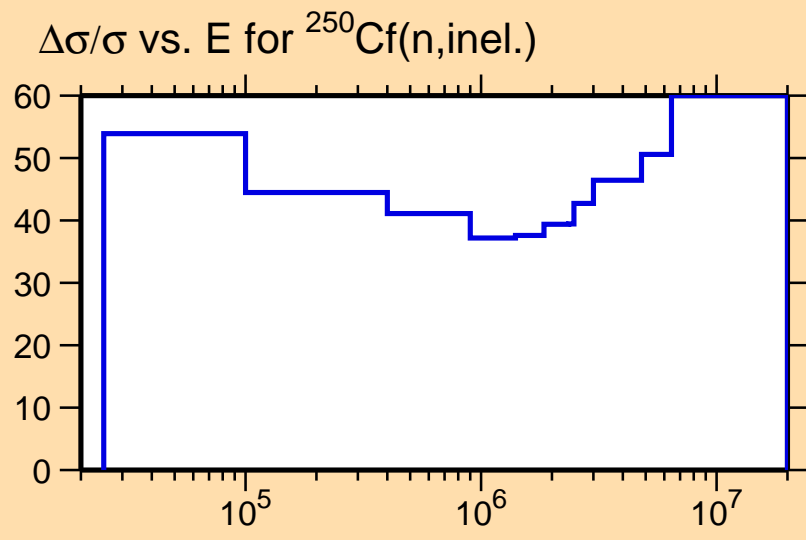


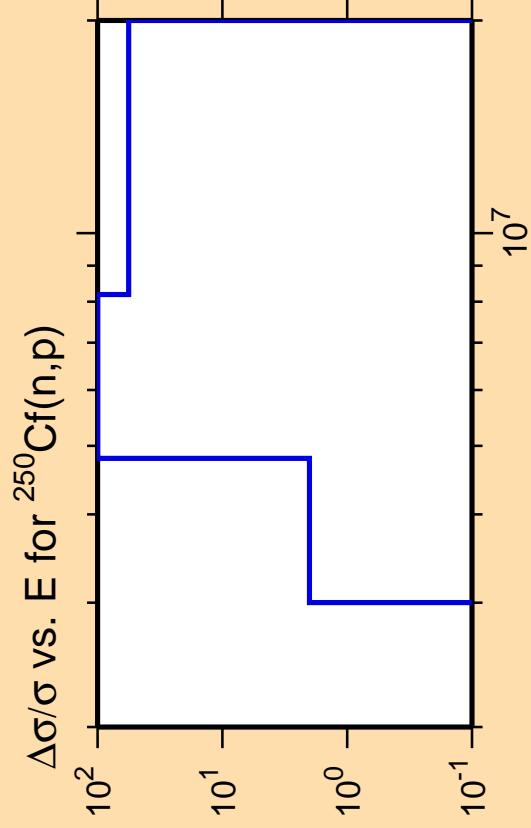


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

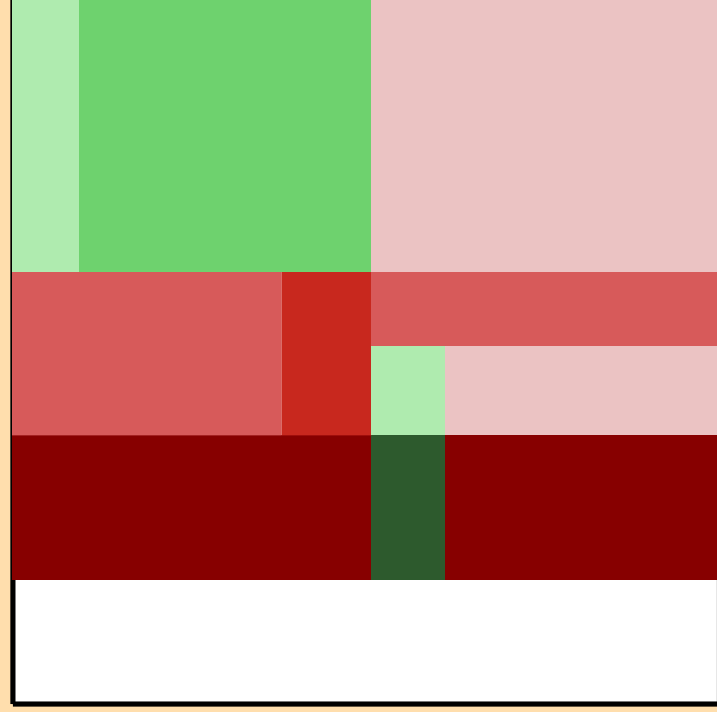
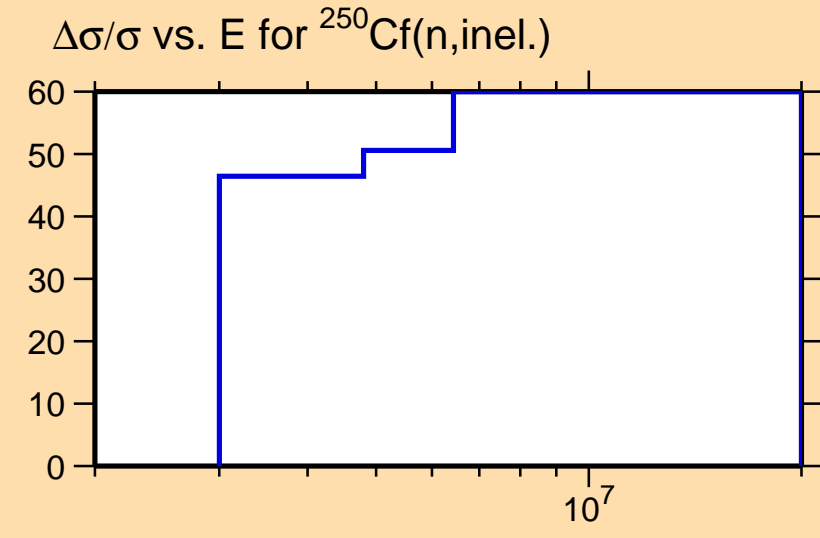




Ordinate scale is %
relative standard deviation.

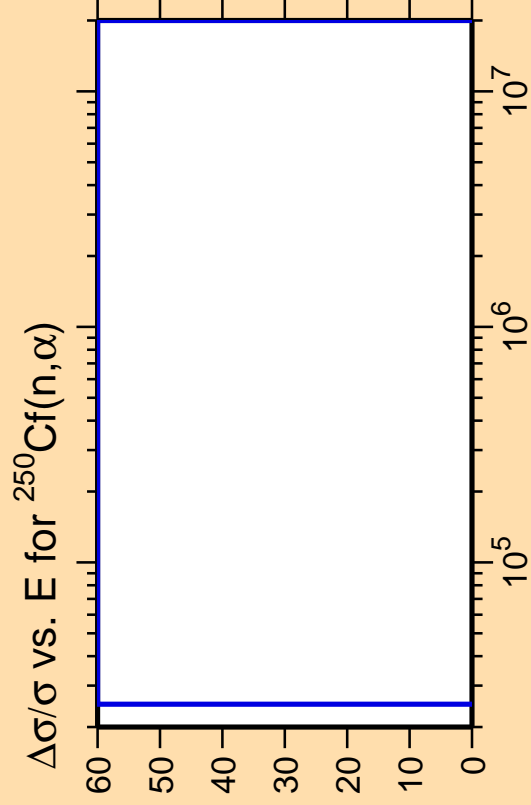
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

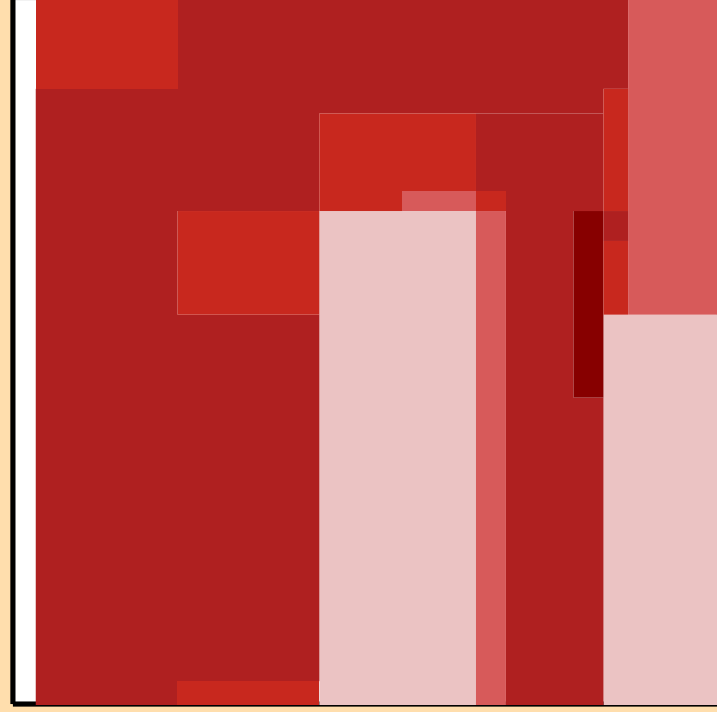
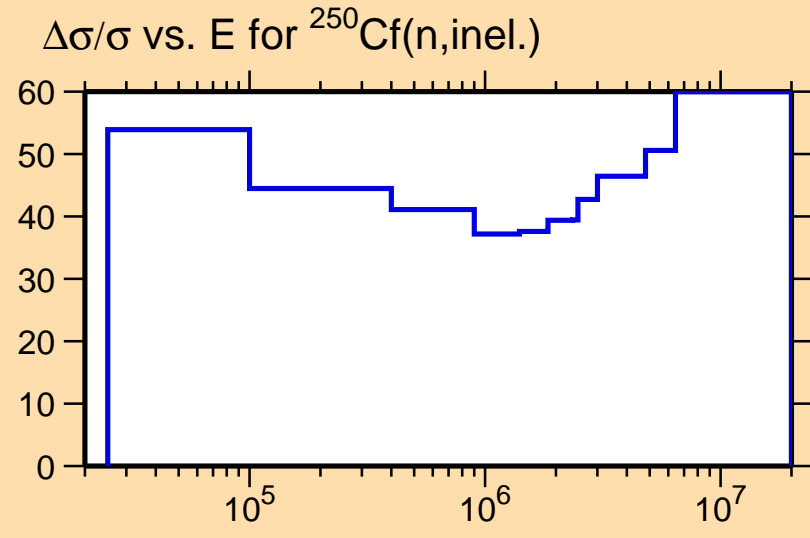




Ordinate scale is %
relative standard deviation.

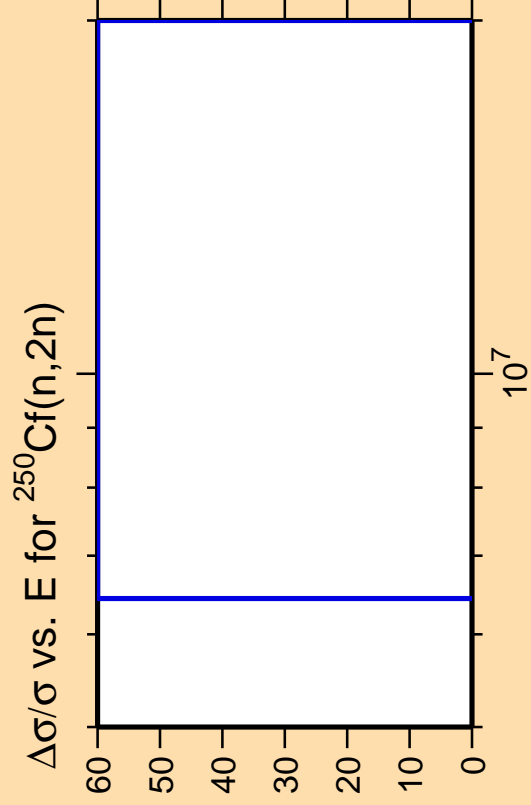
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

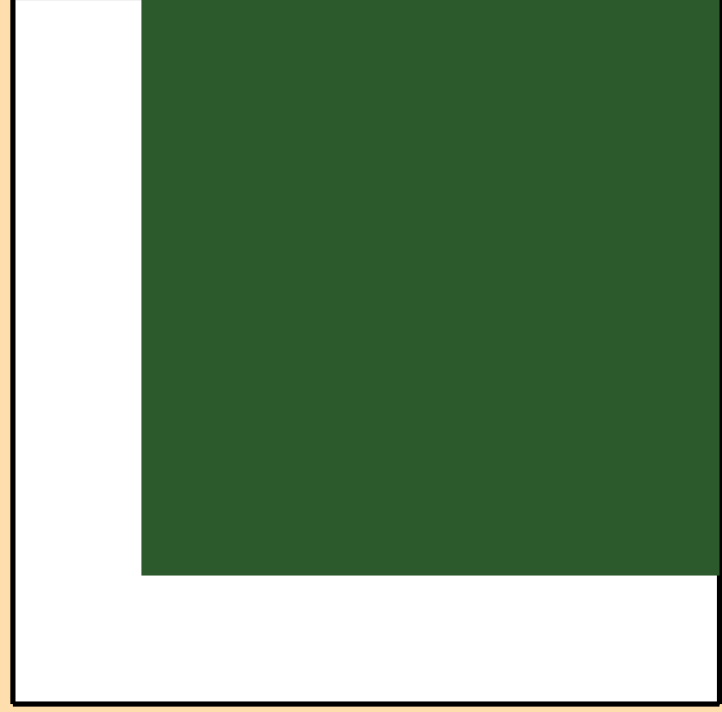
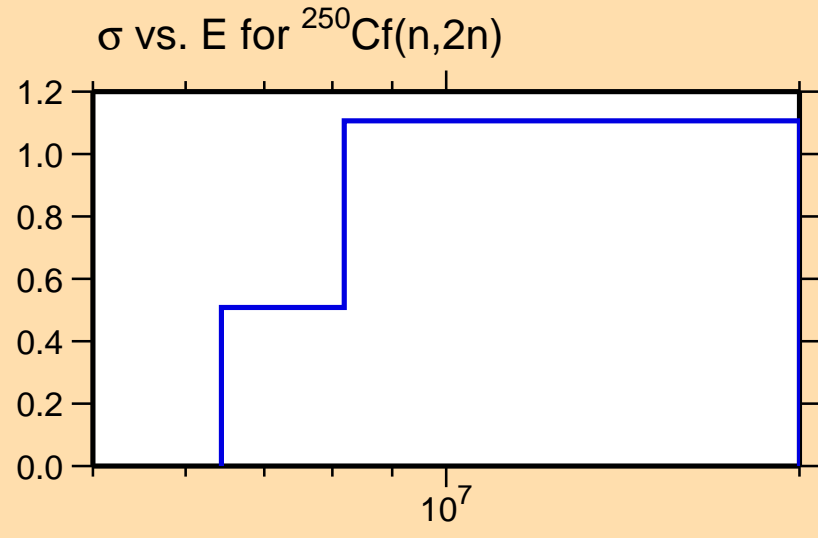




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

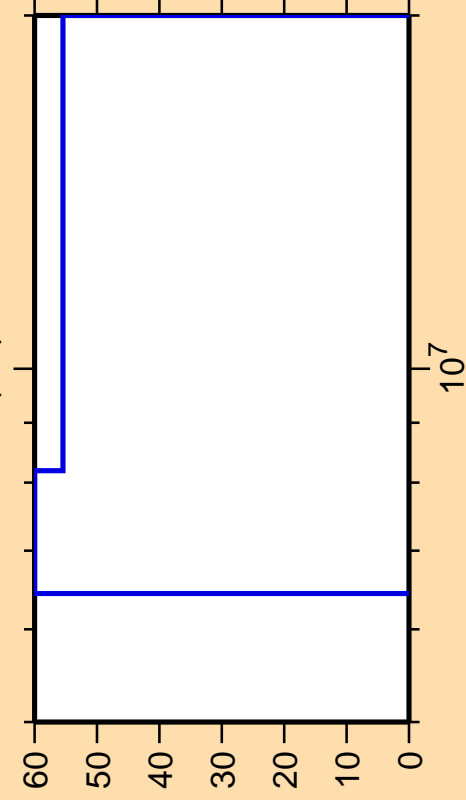
Warning: some uncertainty data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,f)$

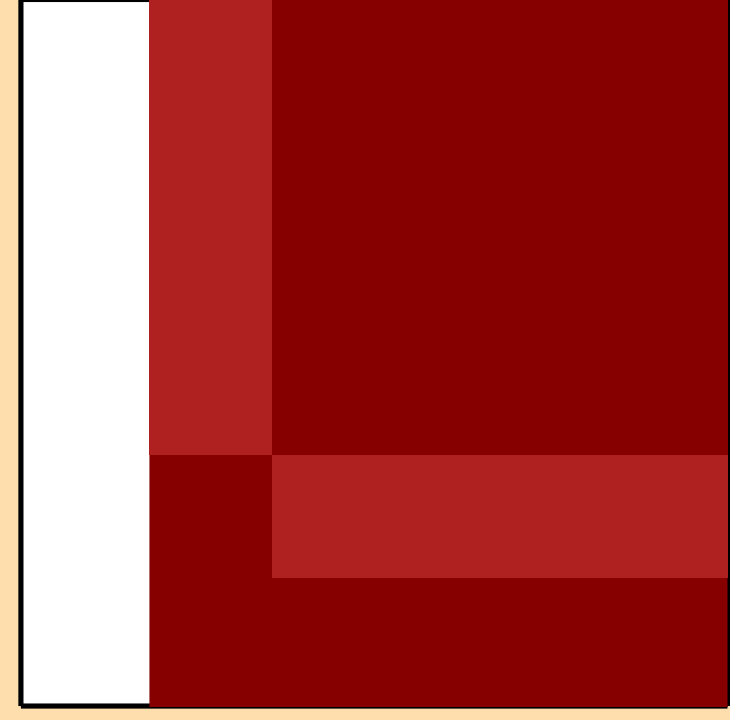
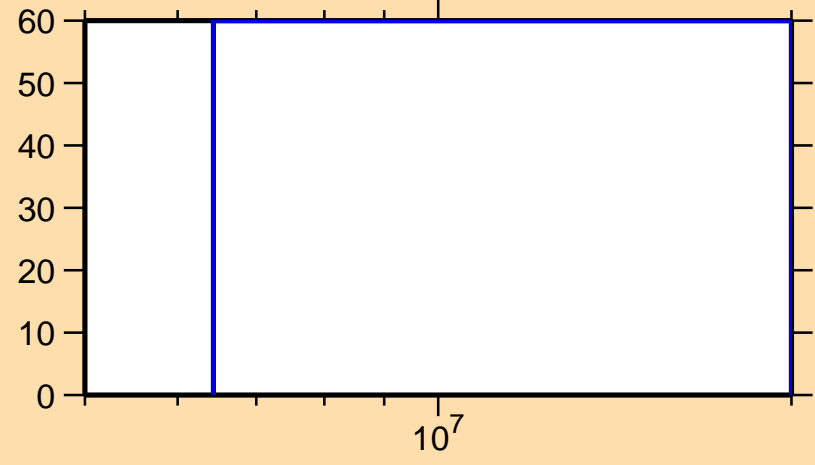


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

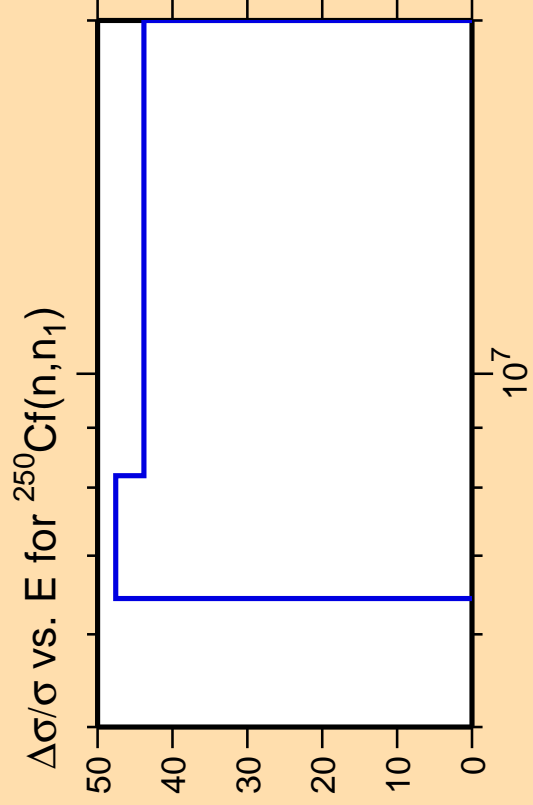
Warning: some uncertainty
data were suppressed.

$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$



Correlation Matrix

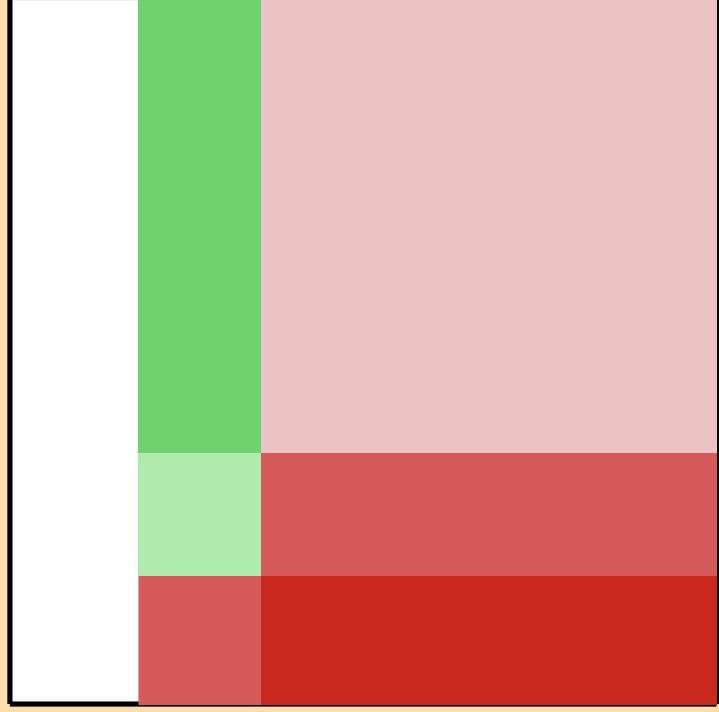
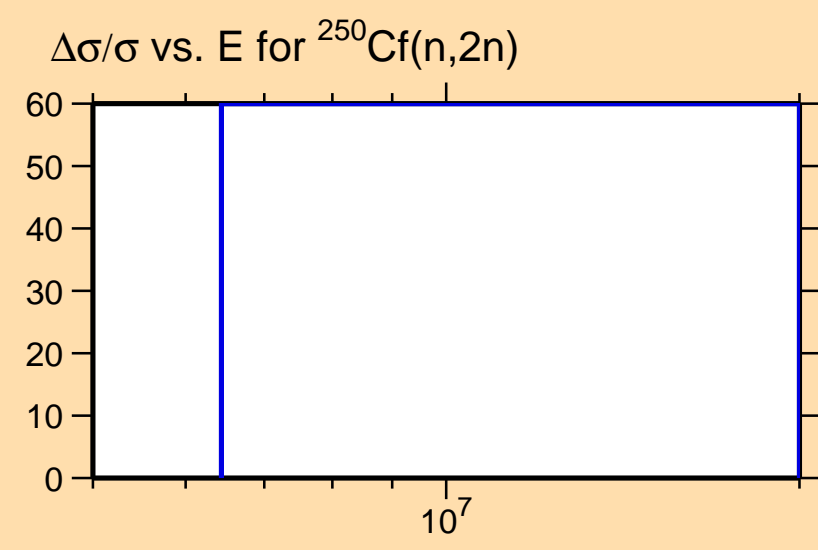




Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

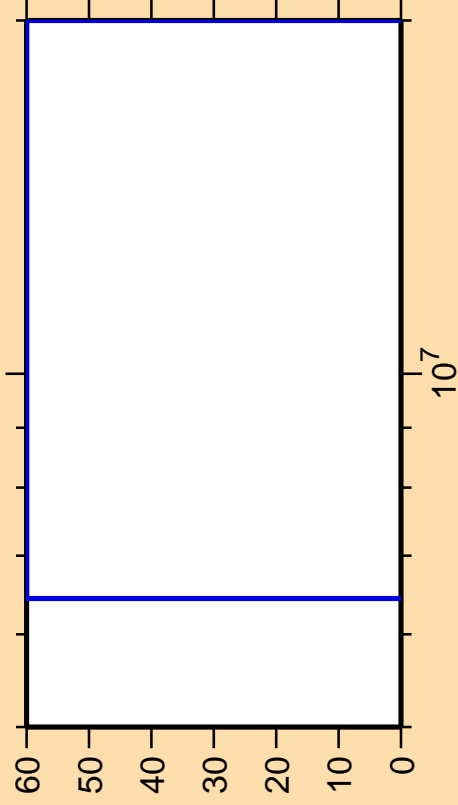
Warning: some uncertainty
data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,n\text{cont.})$

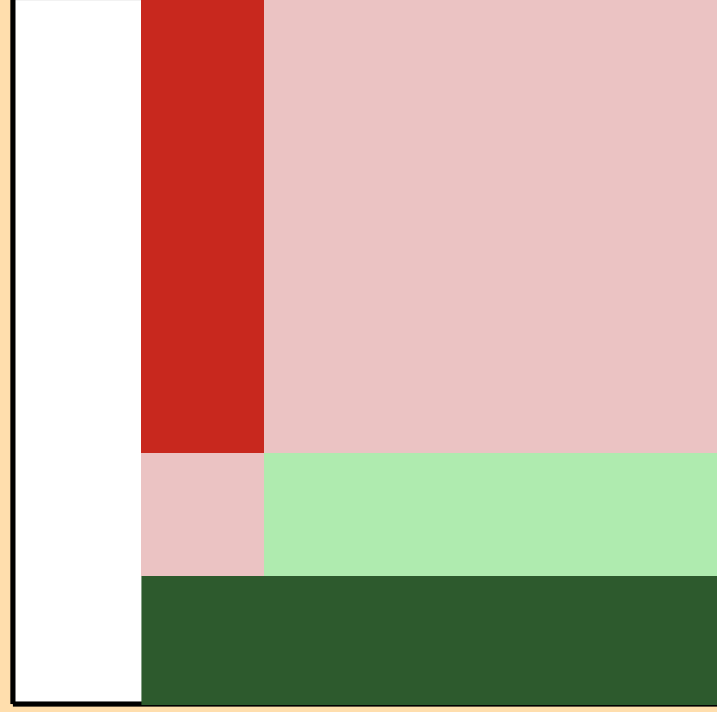
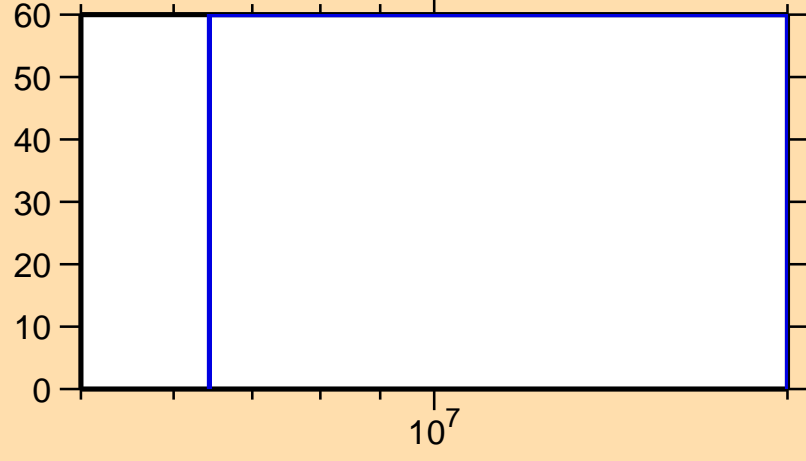


Ordinate scale is %
relative standard deviation.

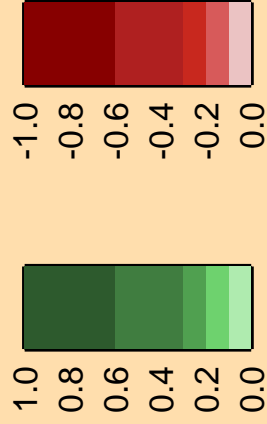
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

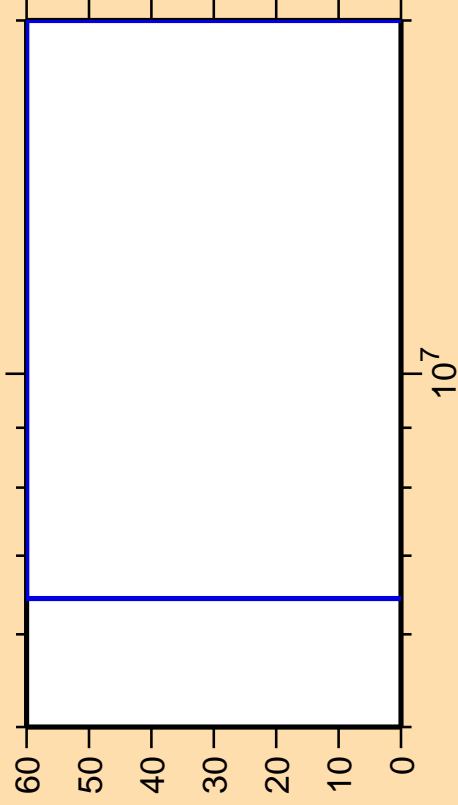
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\gamma)$

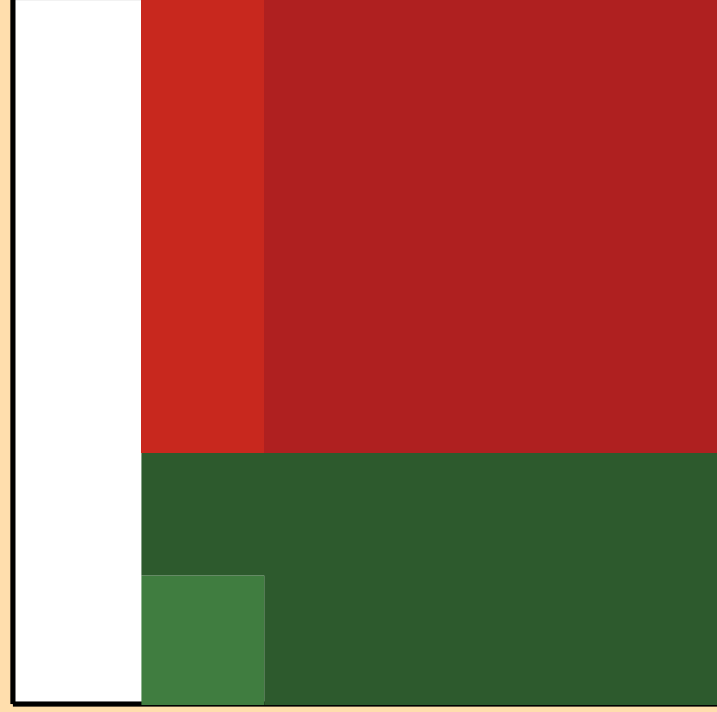
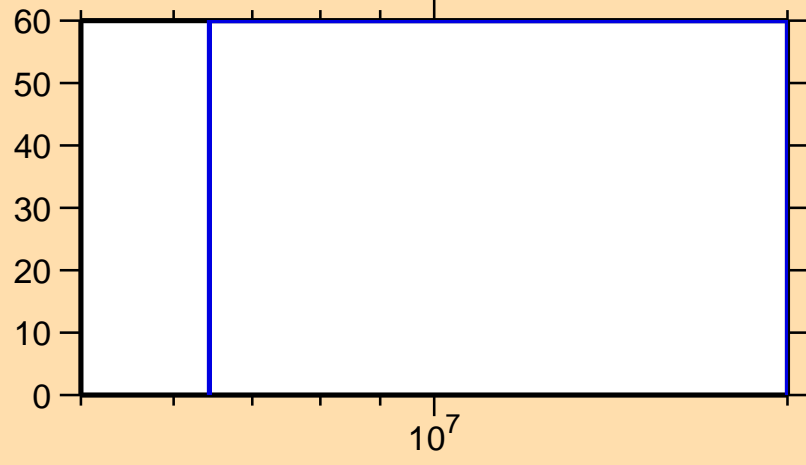


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

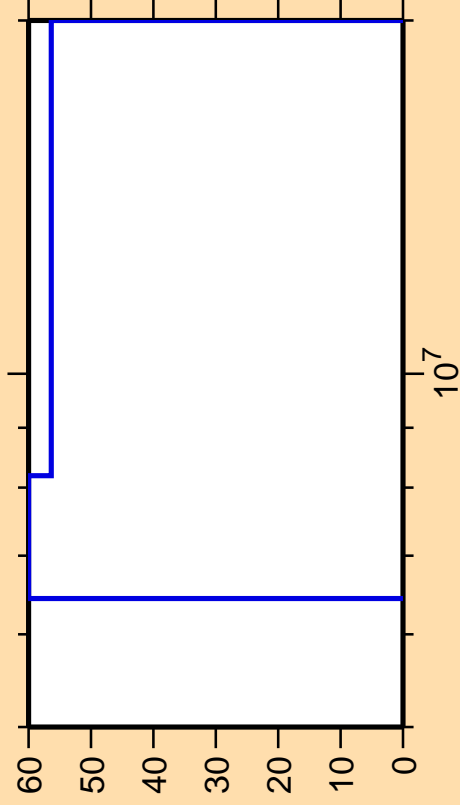
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,p)$

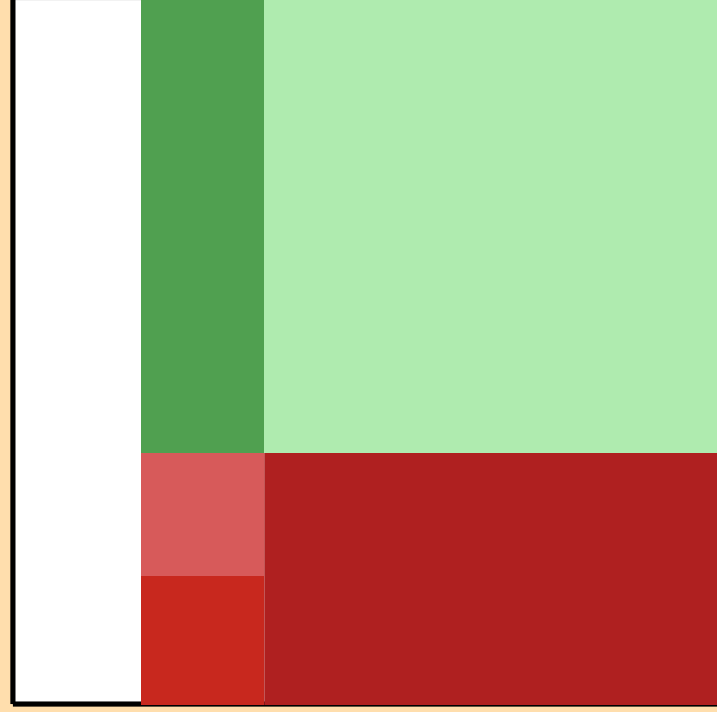
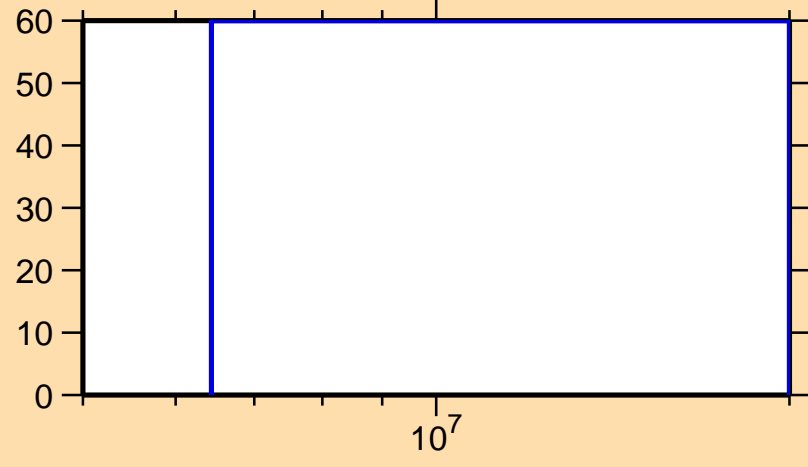


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

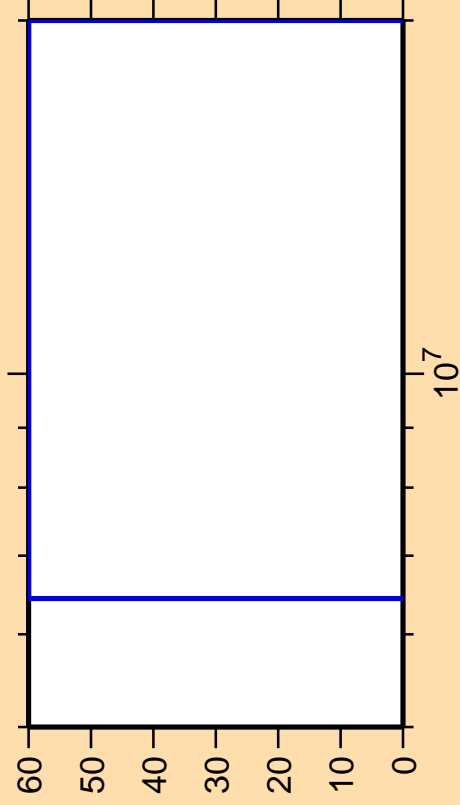
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\alpha)$

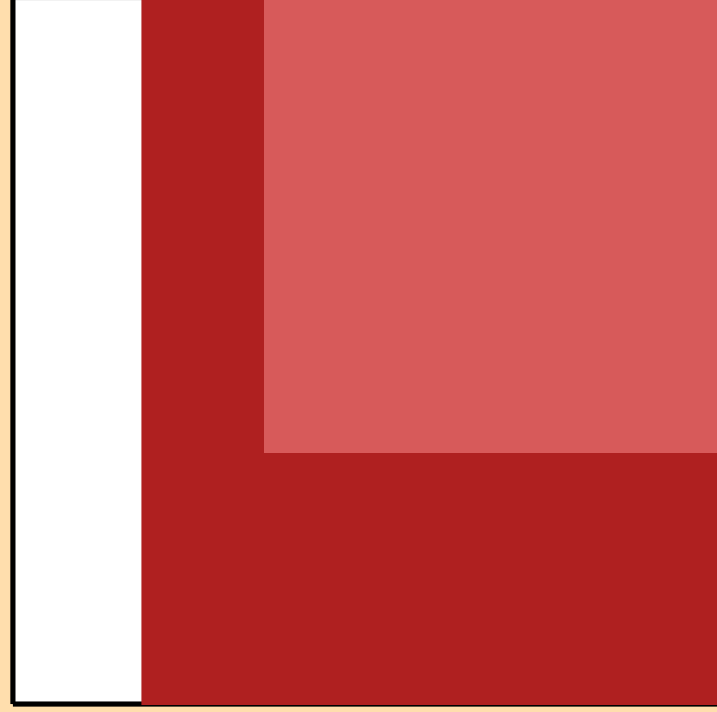
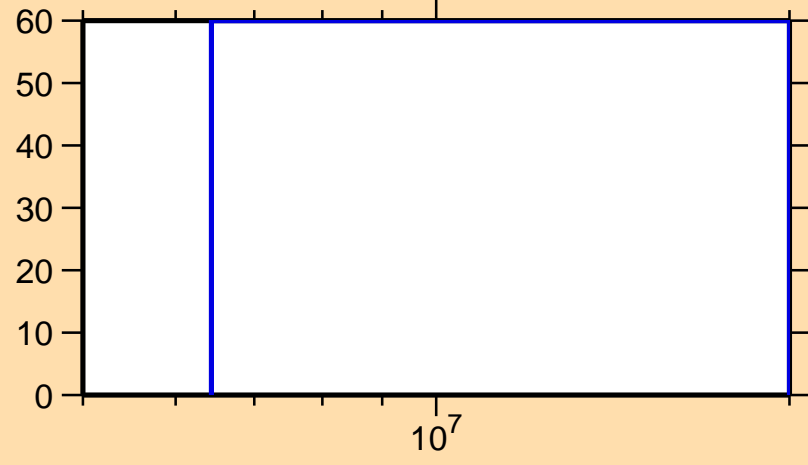


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n)$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,3n)$

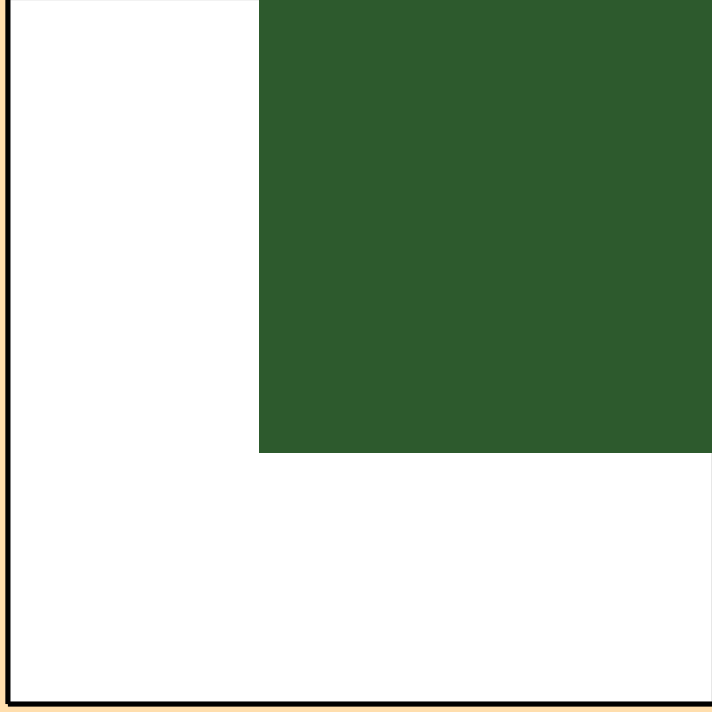
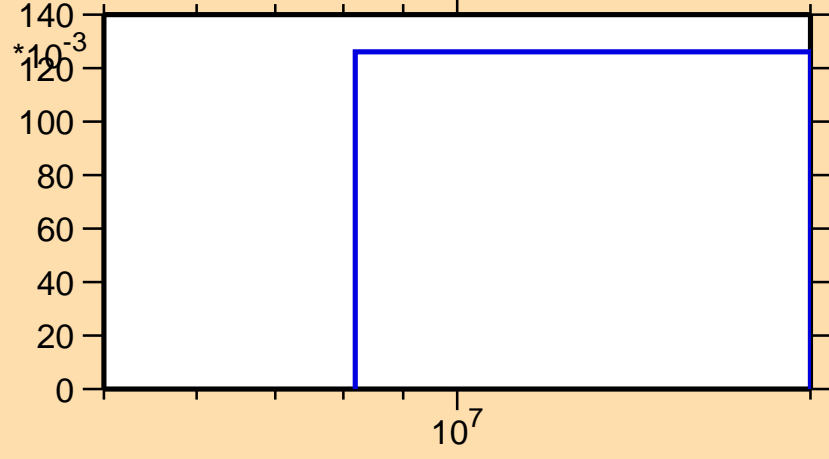


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

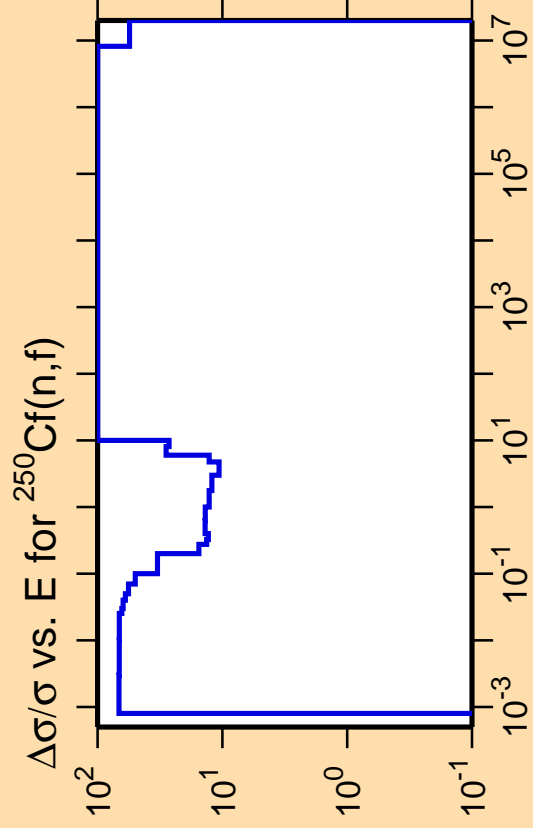
Warning: some uncertainty data were suppressed.

σ vs. E for $^{250}\text{Cf}(n,3n)$



Correlation Matrix

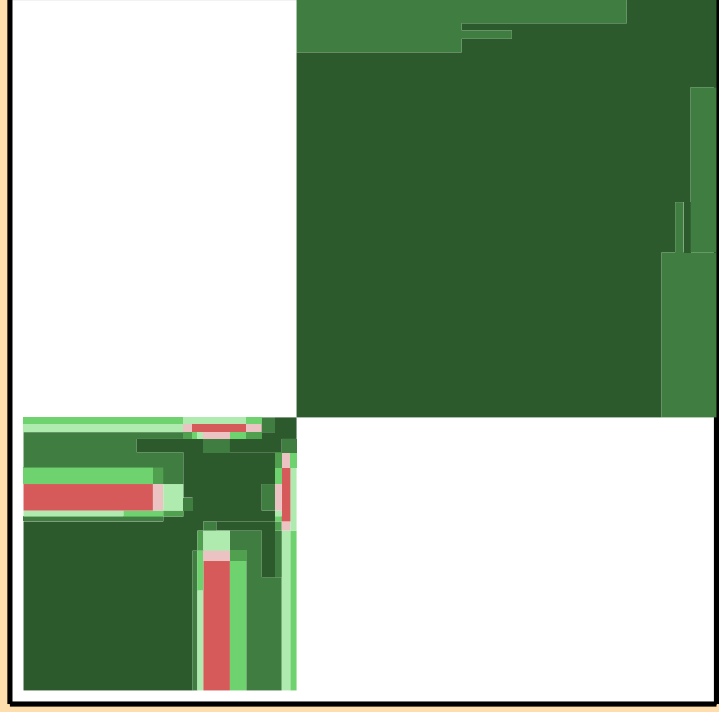
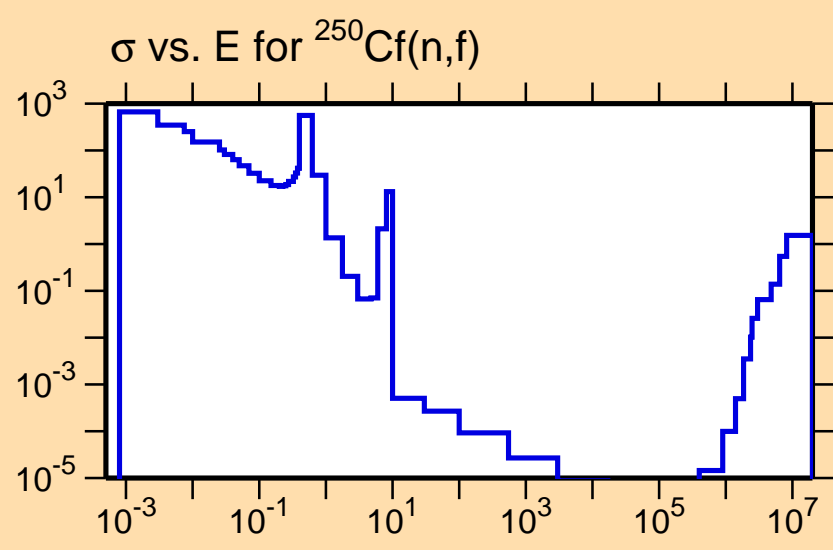




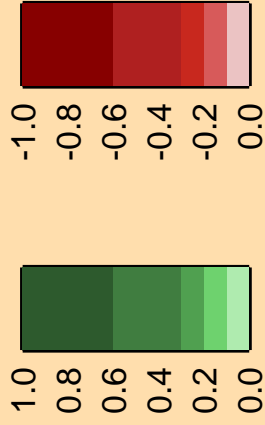
Ordinate scales are % relative standard deviation and barns.

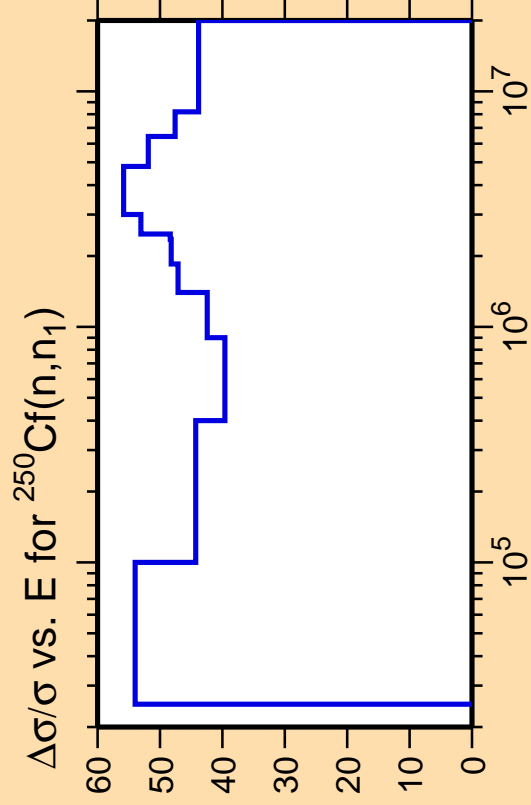
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

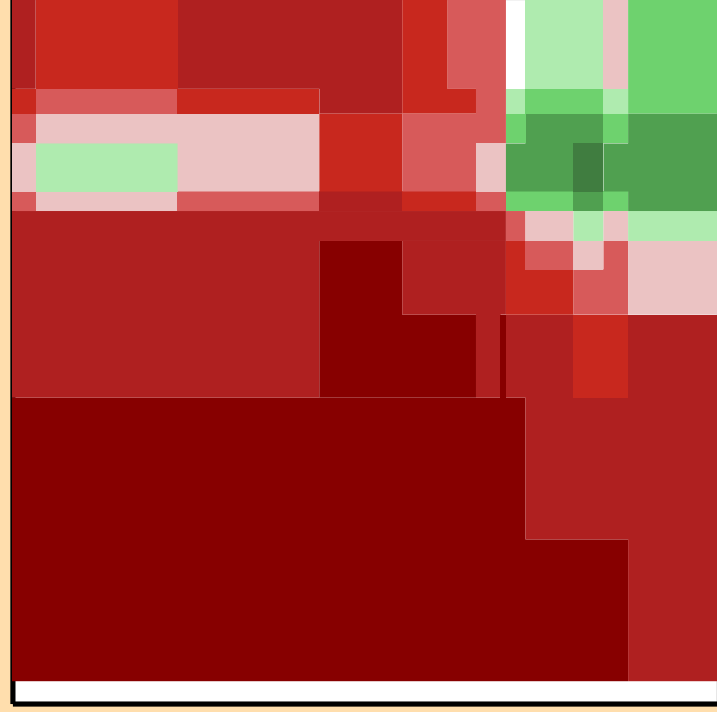
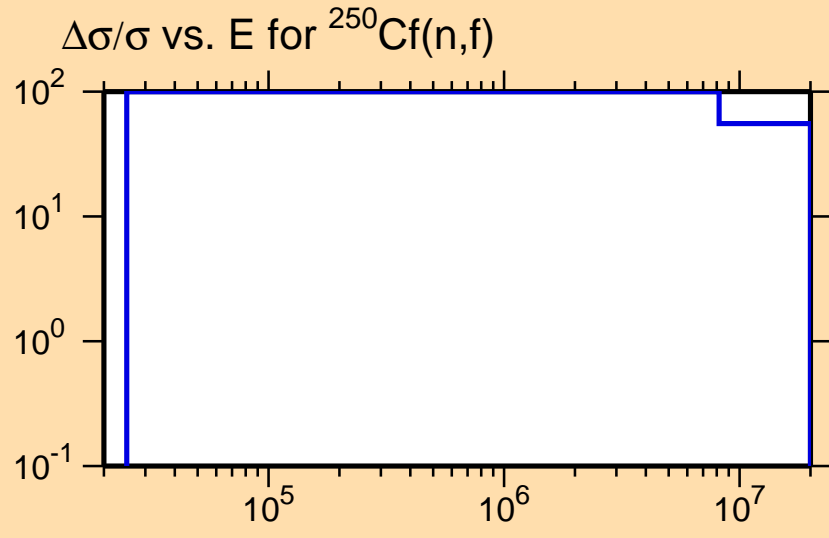




Ordinate scale is %
relative standard deviation.

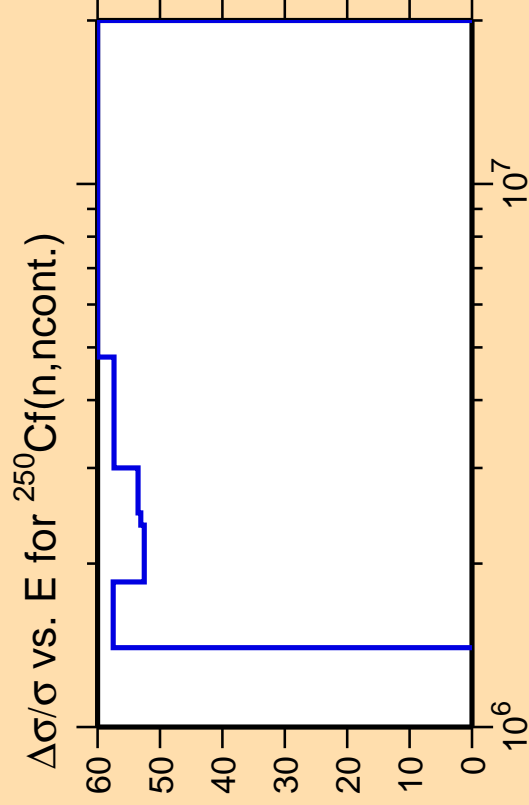
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

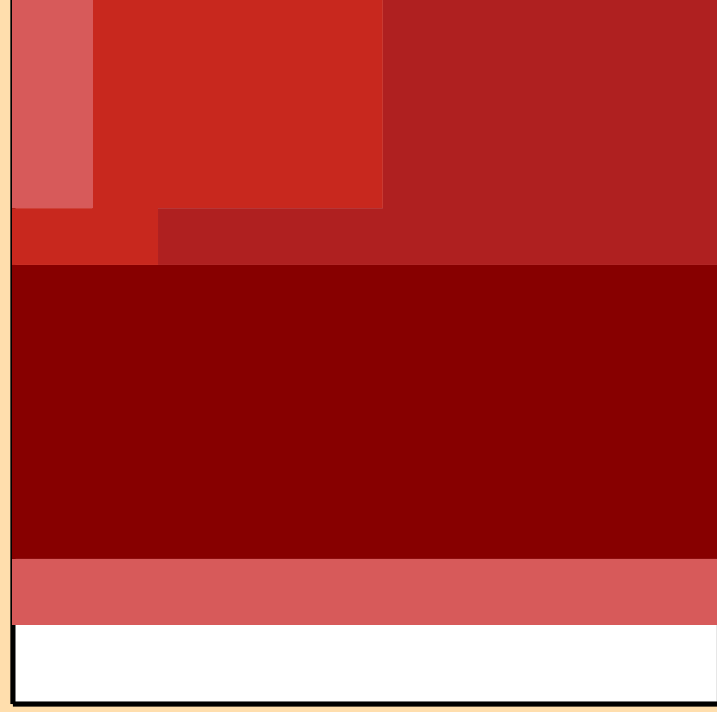
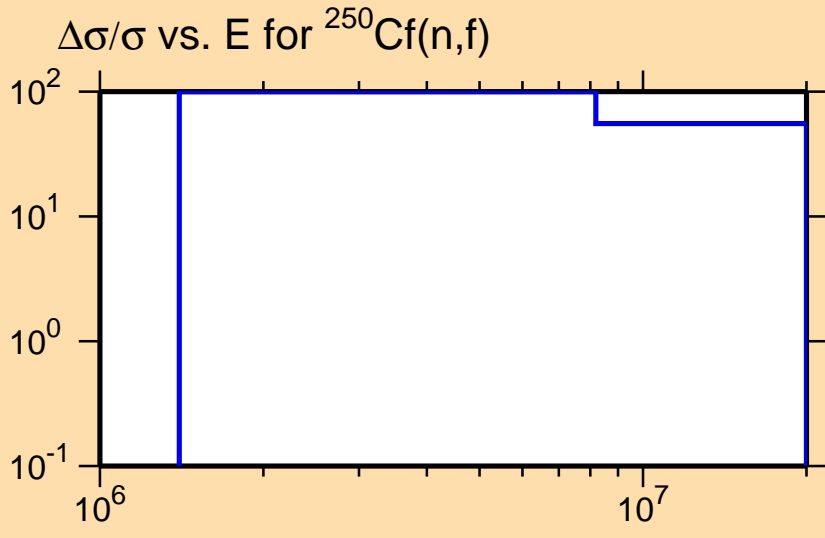




Ordinate scale is %
relative standard deviation.

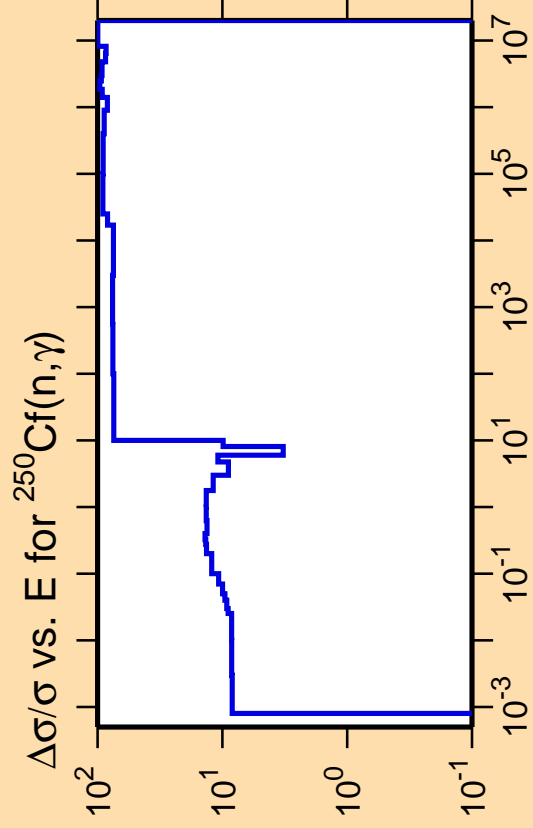
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

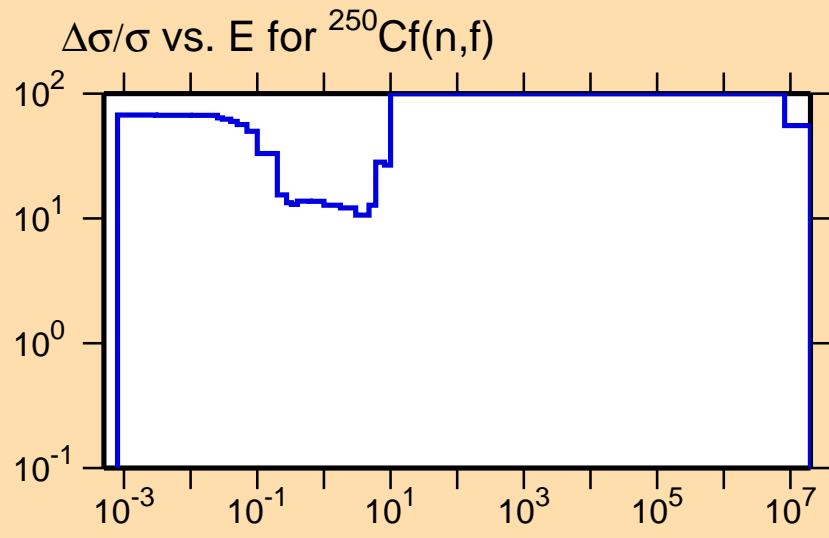




Ordinate scale is %
relative standard deviation.

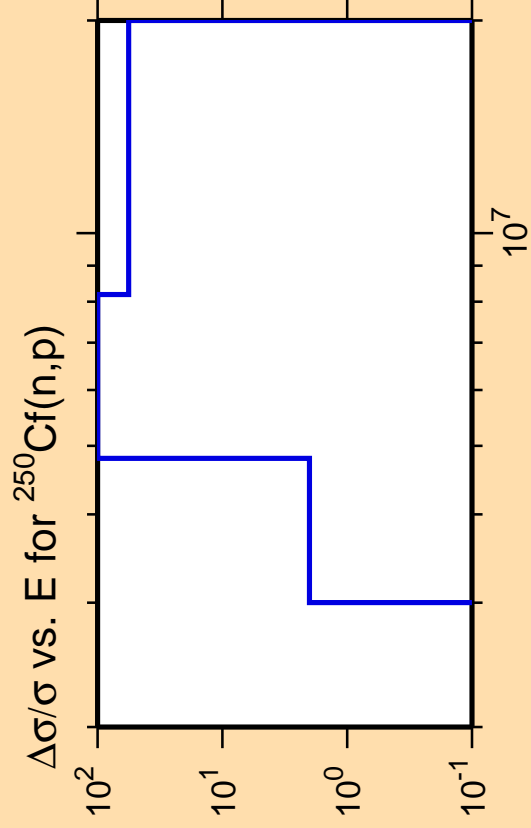
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

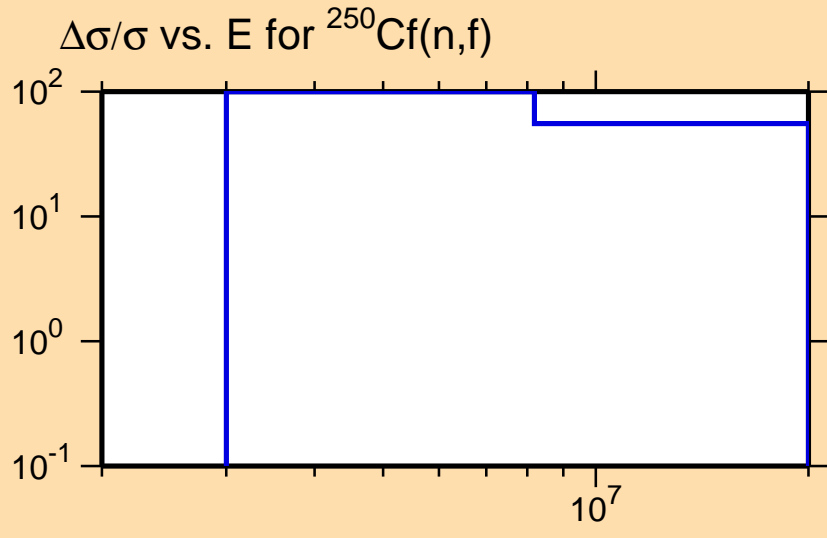




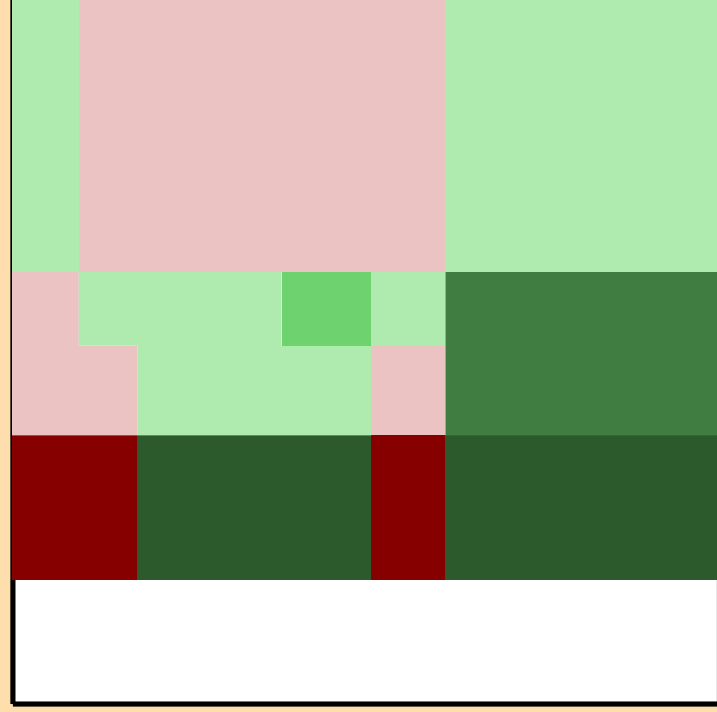
Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.

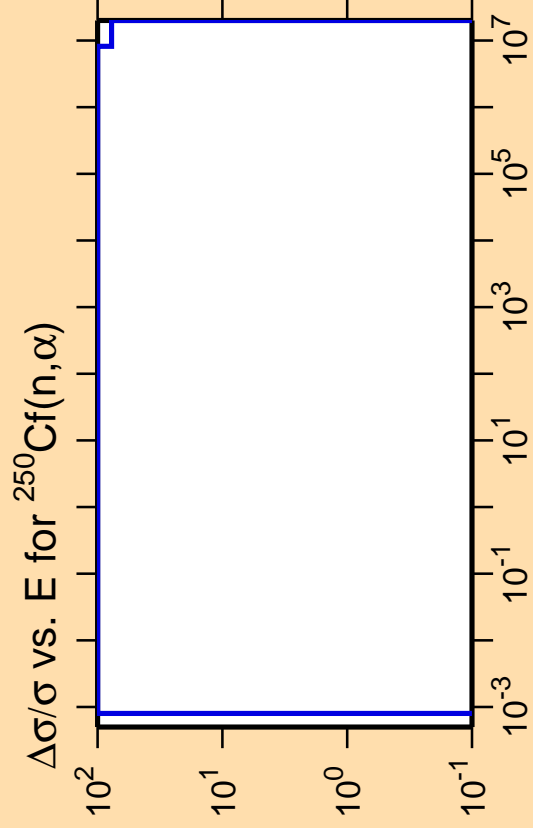


$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,f)$



Correlation Matrix

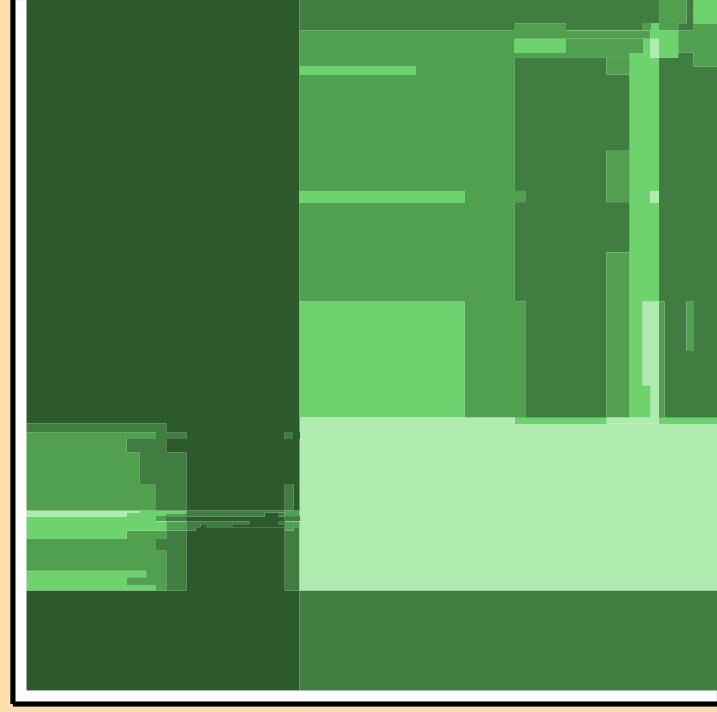
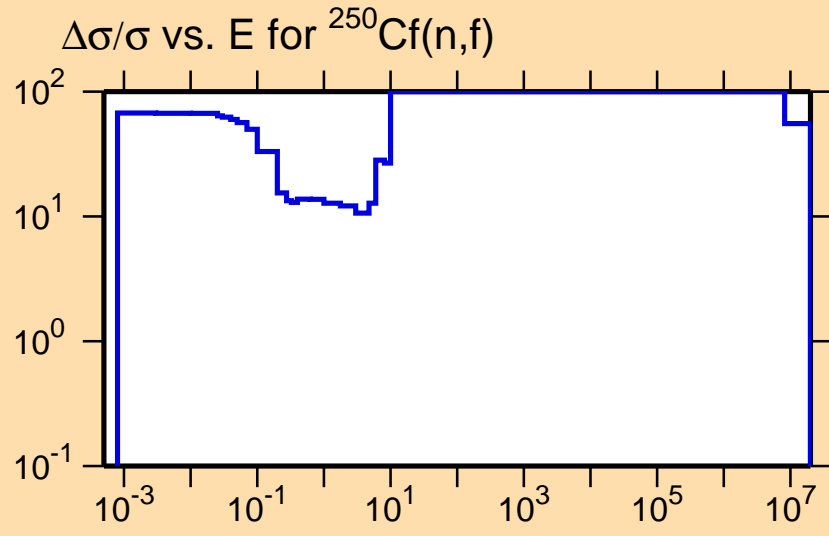




Ordinate scale is %
relative standard deviation.

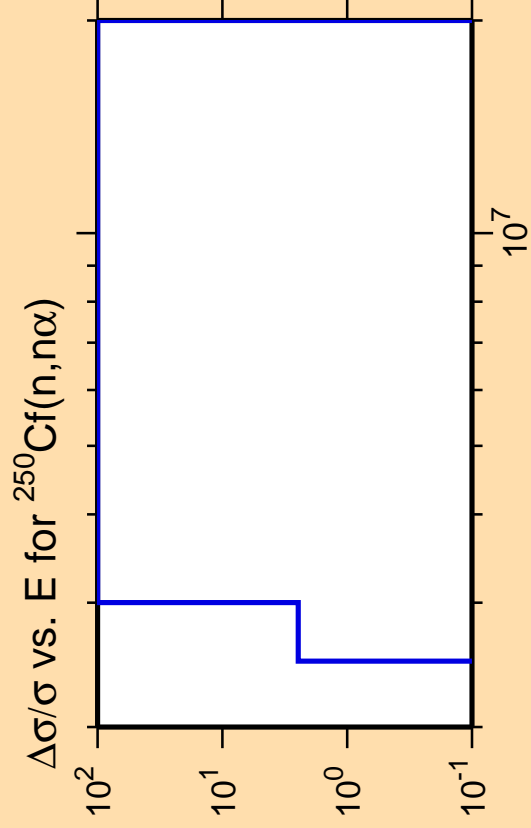
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

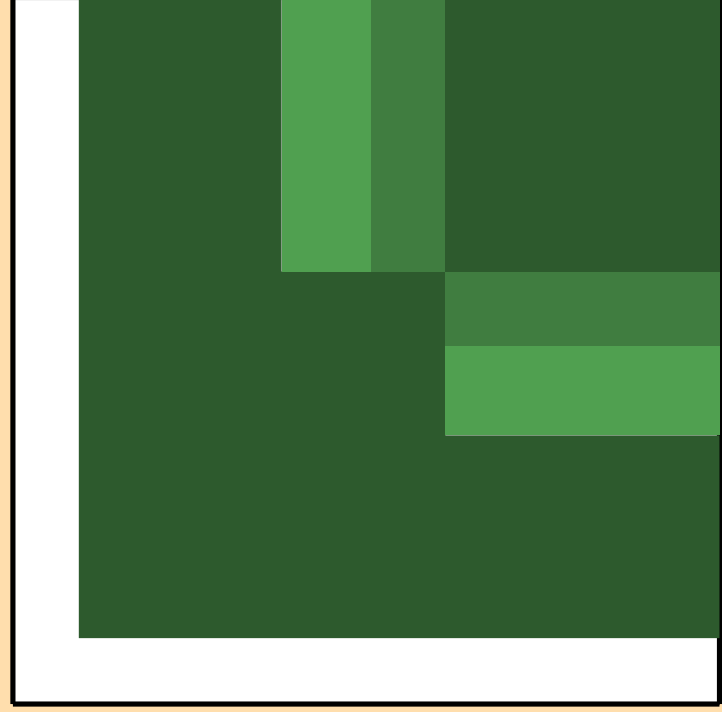
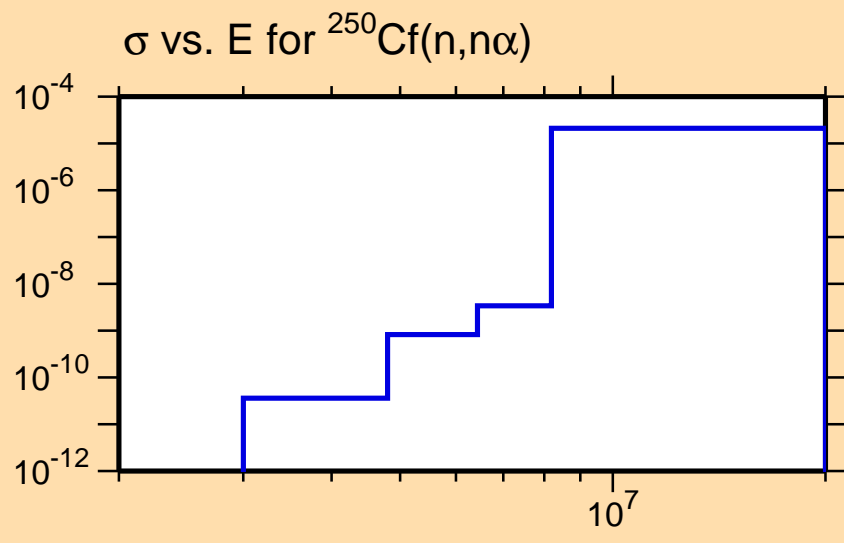




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2n\alpha)$

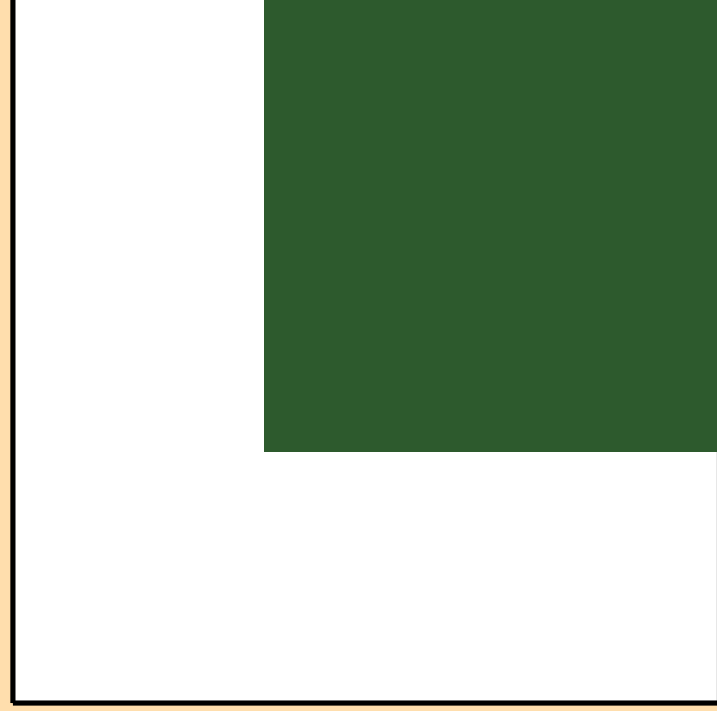
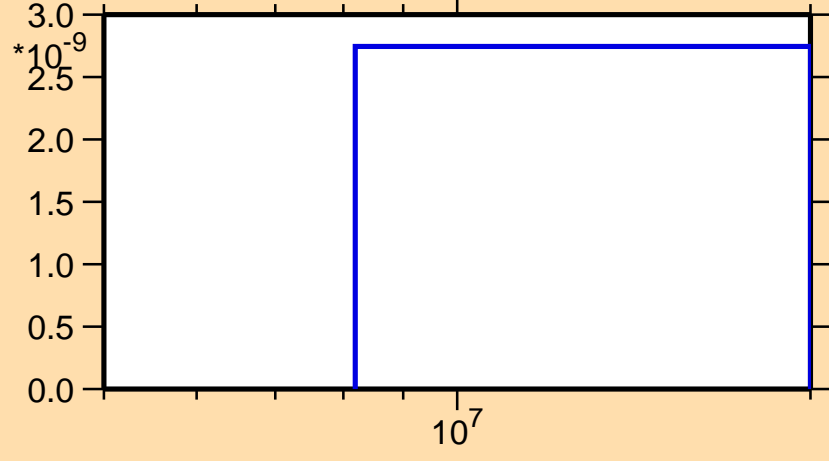


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

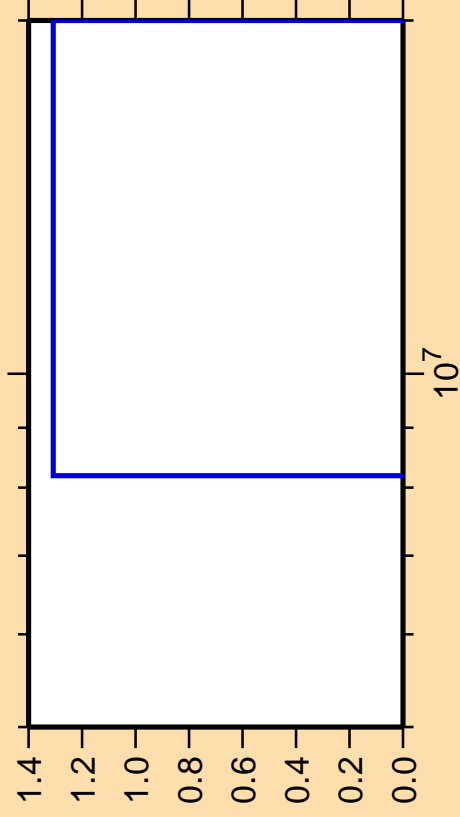
σ vs. E for $^{250}\text{Cf}(n,2n\alpha)$



Correlation Matrix



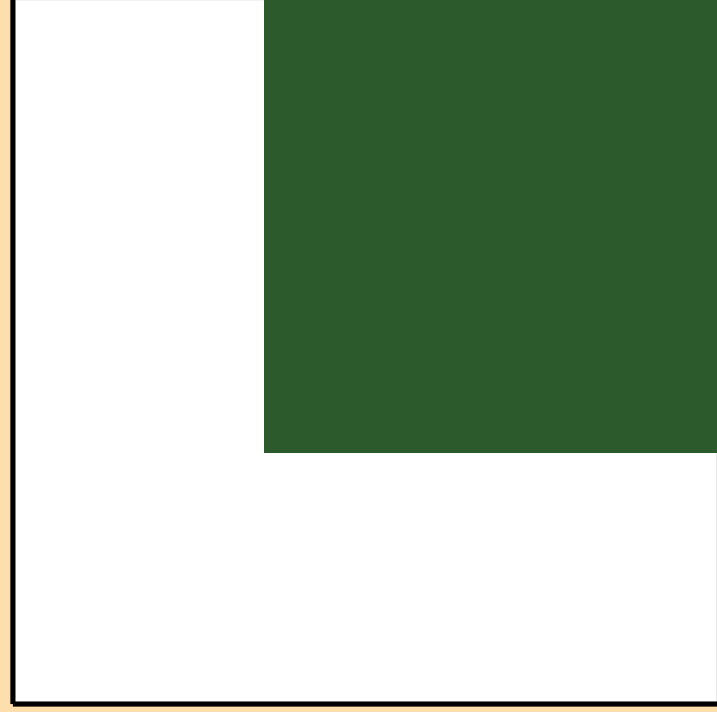
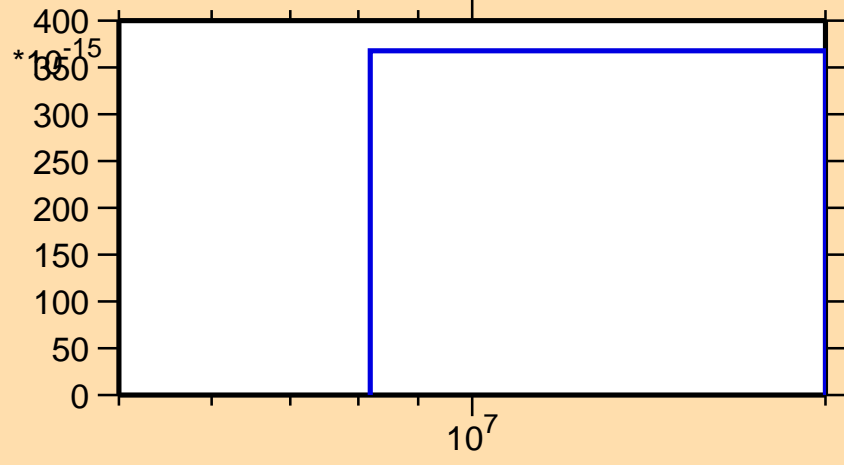
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,3n\alpha)$



Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

σ vs. E for $^{250}\text{Cf}(n,3n\alpha)$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,np)$

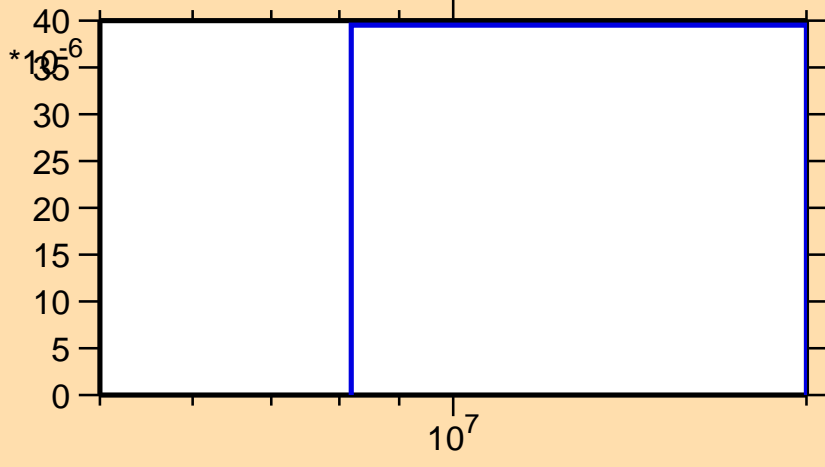


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

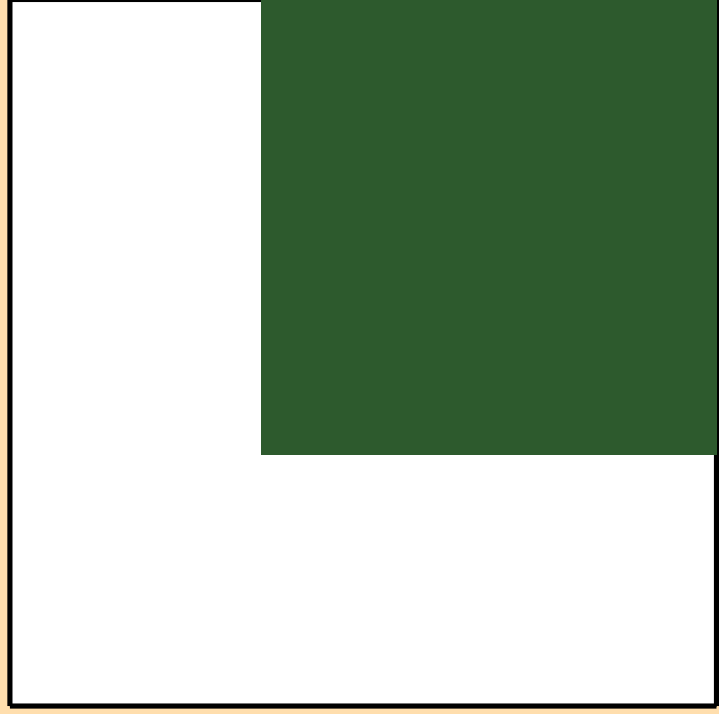
Warning: some uncertainty data were suppressed.

σ vs. E for $^{250}\text{Cf}(n,np)$

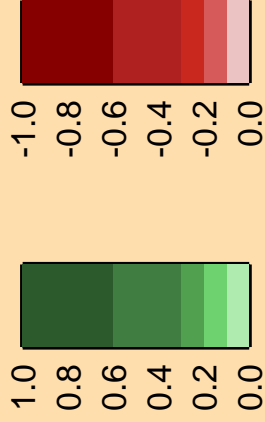


*

10^7



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,nd)$

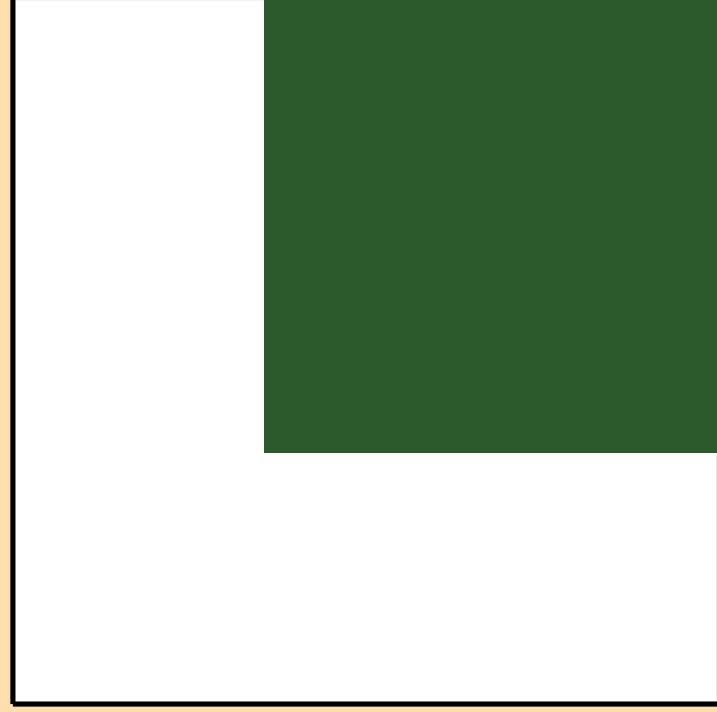
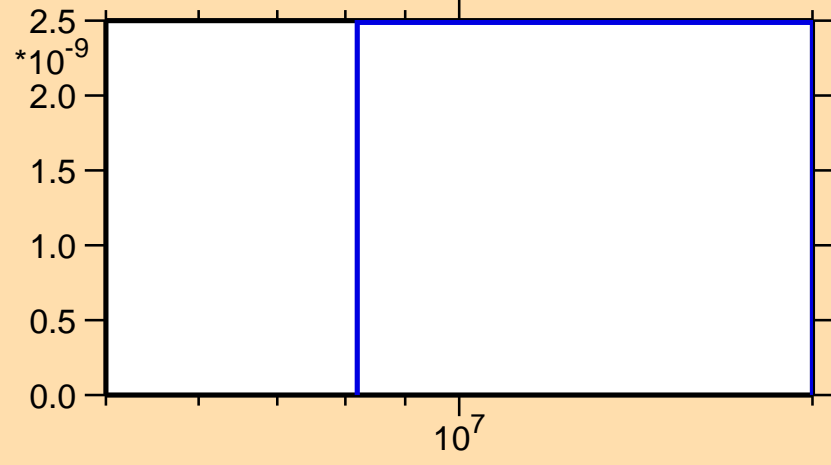


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

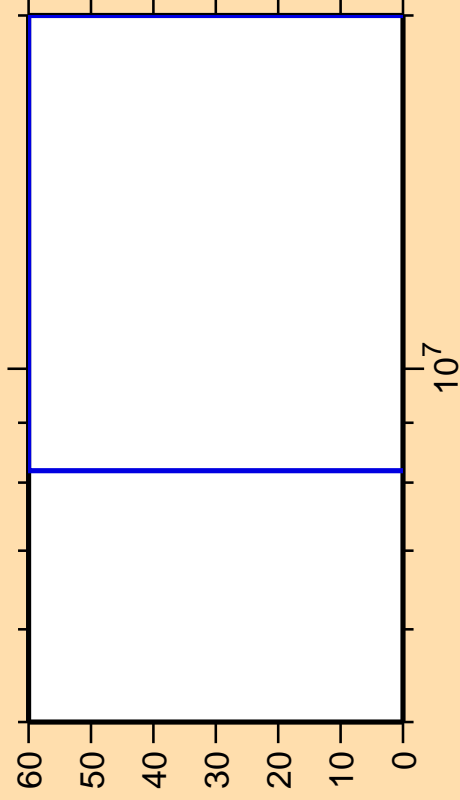
σ vs. E for $^{250}\text{Cf}(n,nd)$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,nt)$

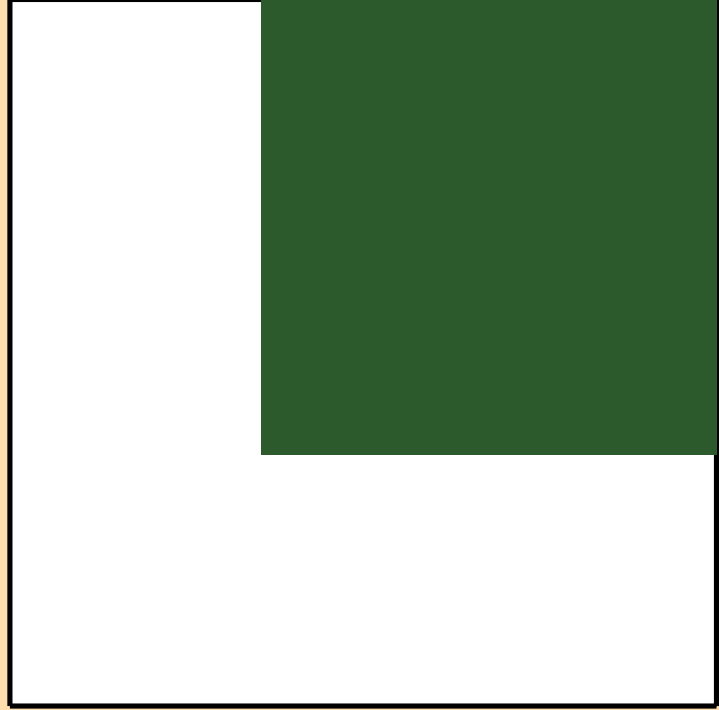
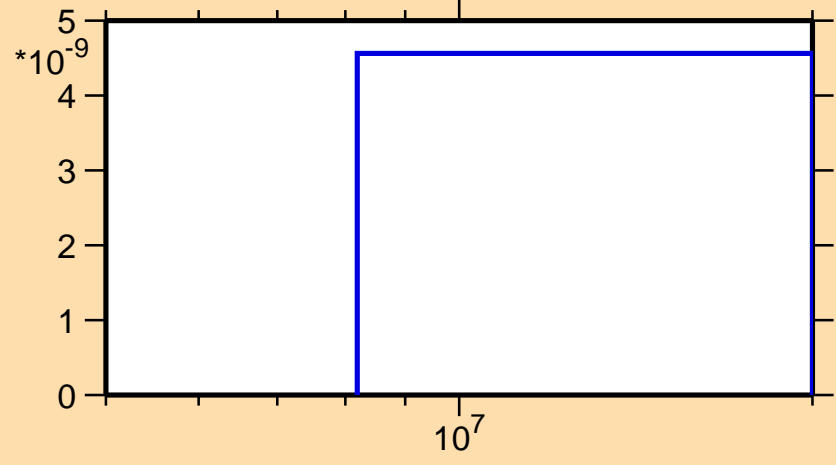


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

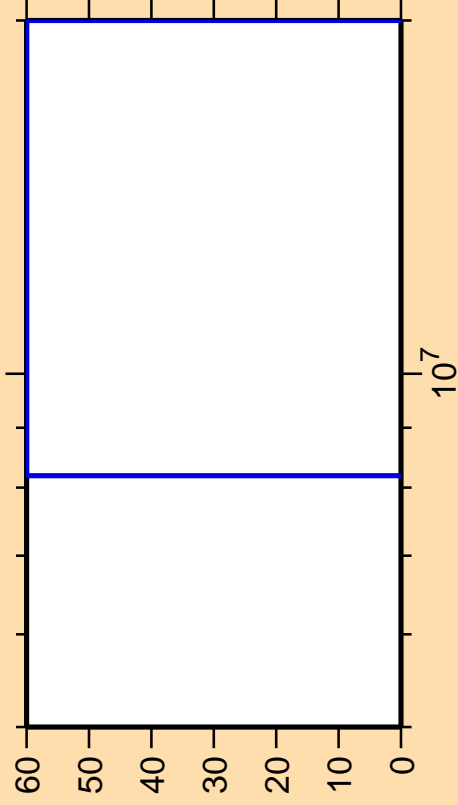
σ vs. E for $^{250}\text{Cf}(n,nt)$



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,2np)$

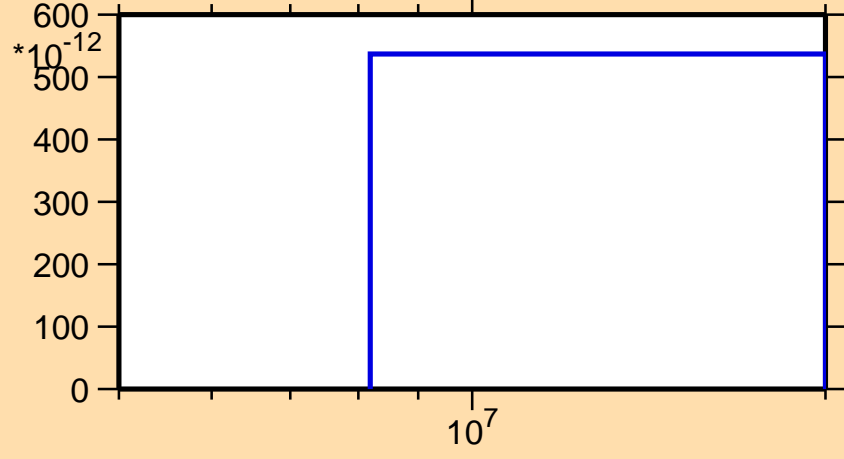


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

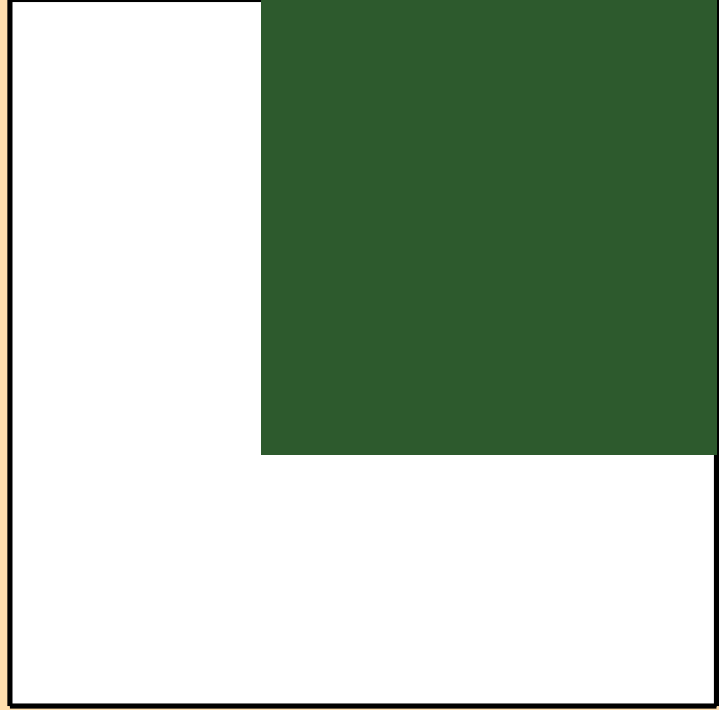
Warning: some uncertainty data were suppressed.

σ vs. E for $^{250}\text{Cf}(n,2np)$

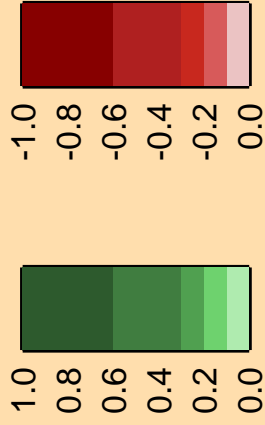


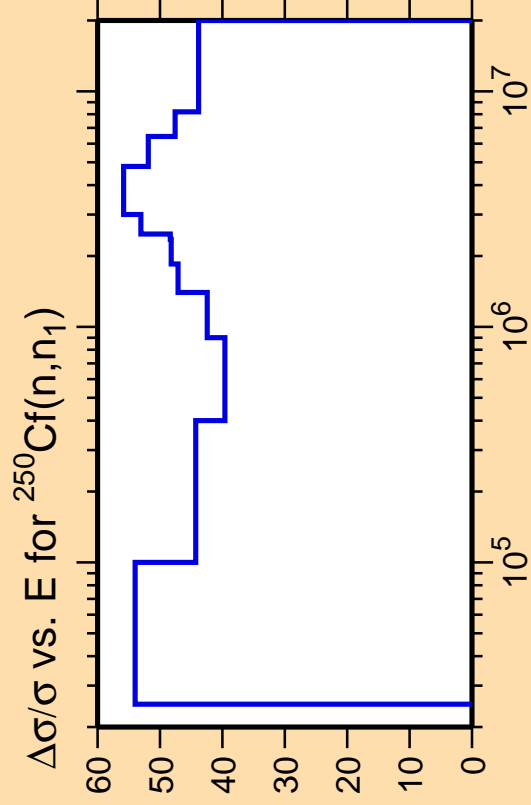
$\times 10^{-12}$

10^7



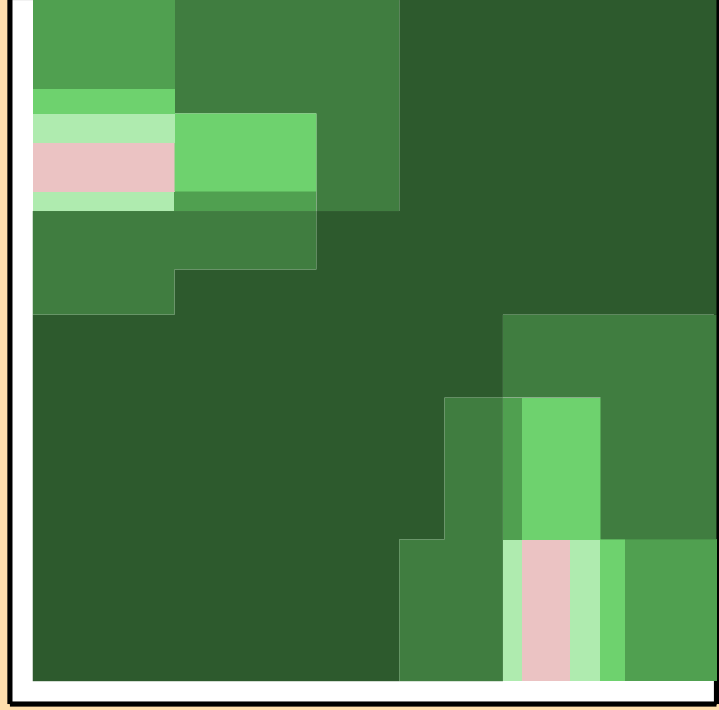
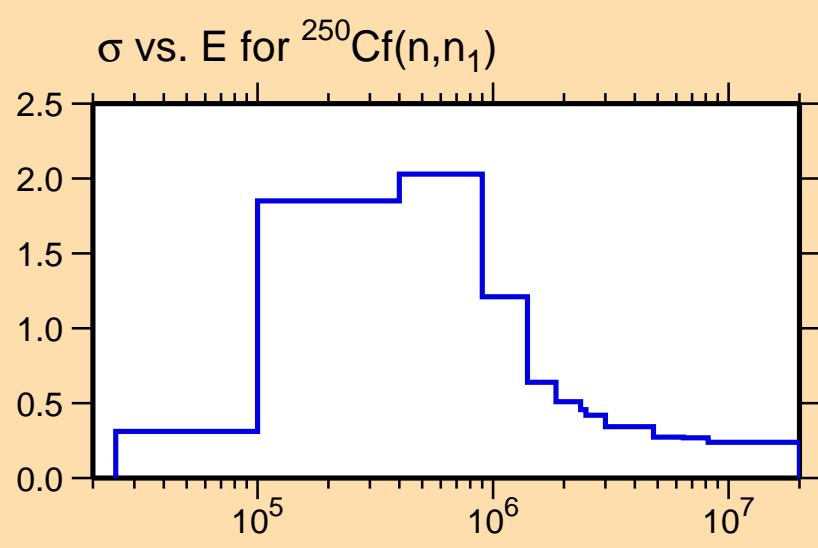
Correlation Matrix





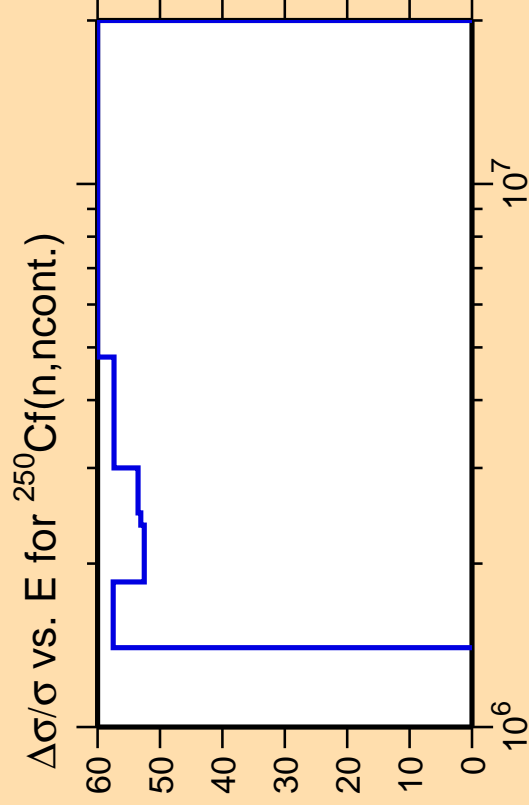
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).



Correlation Matrix

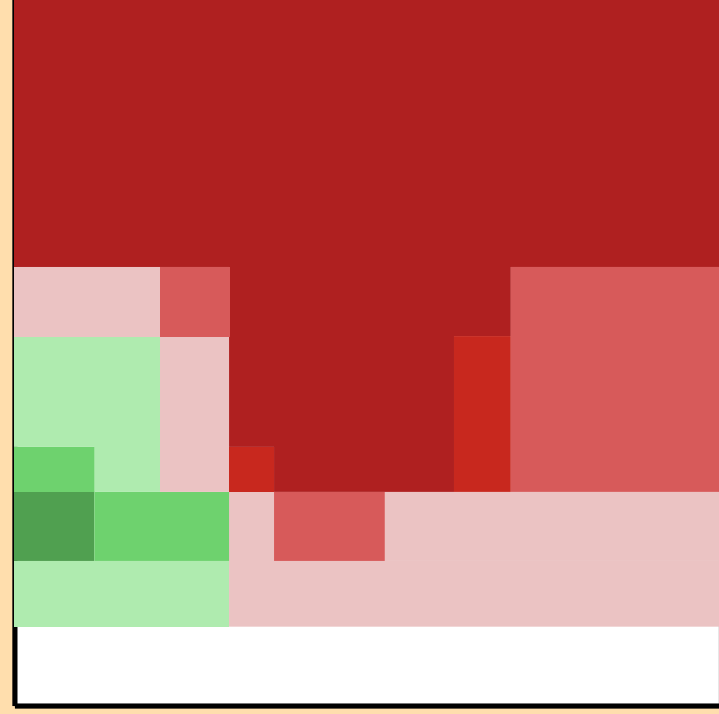
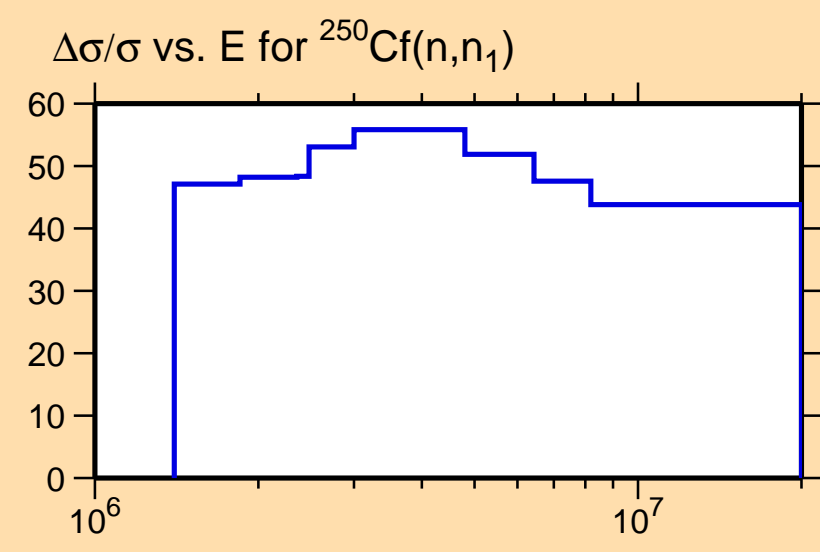




Ordinate scale is %
relative standard deviation.

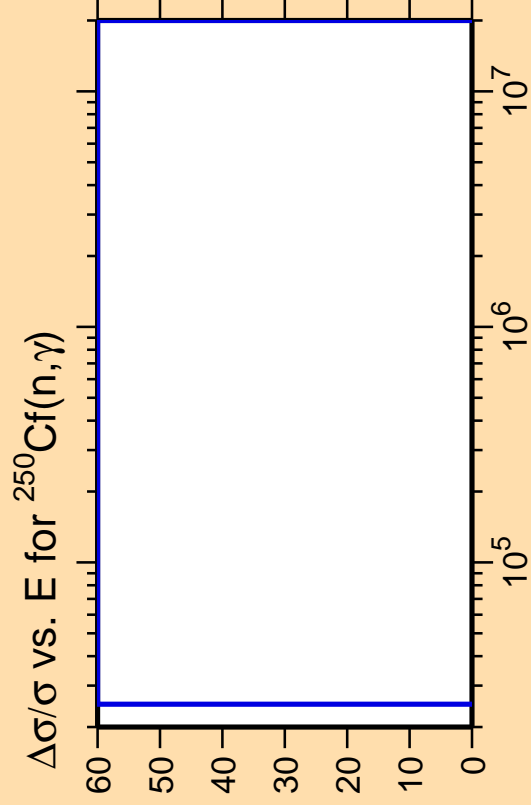
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

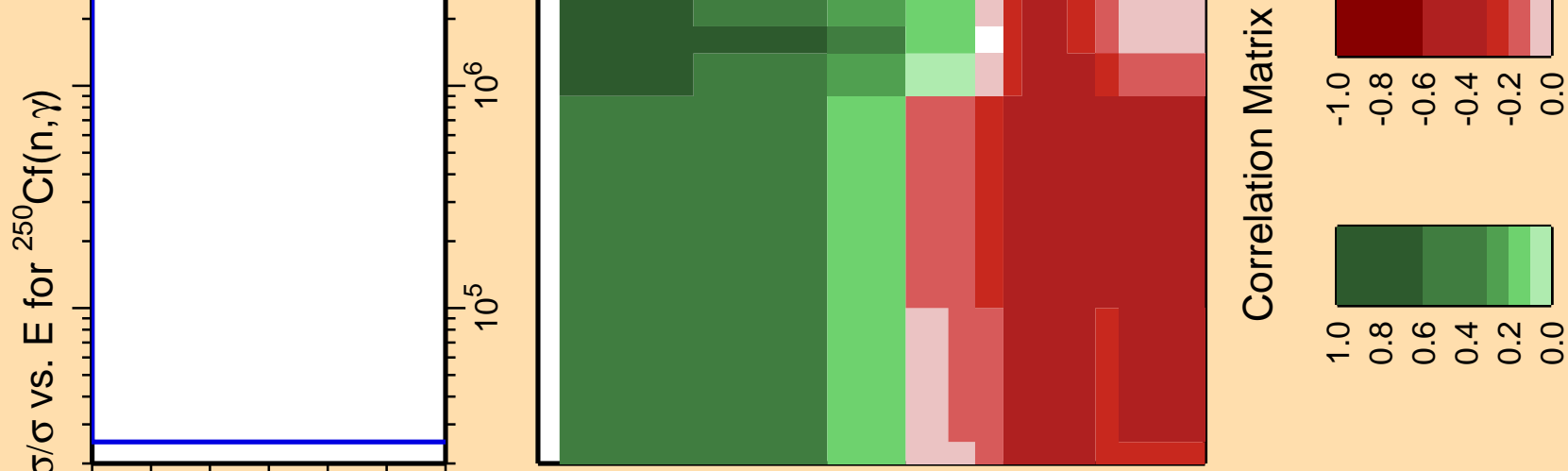
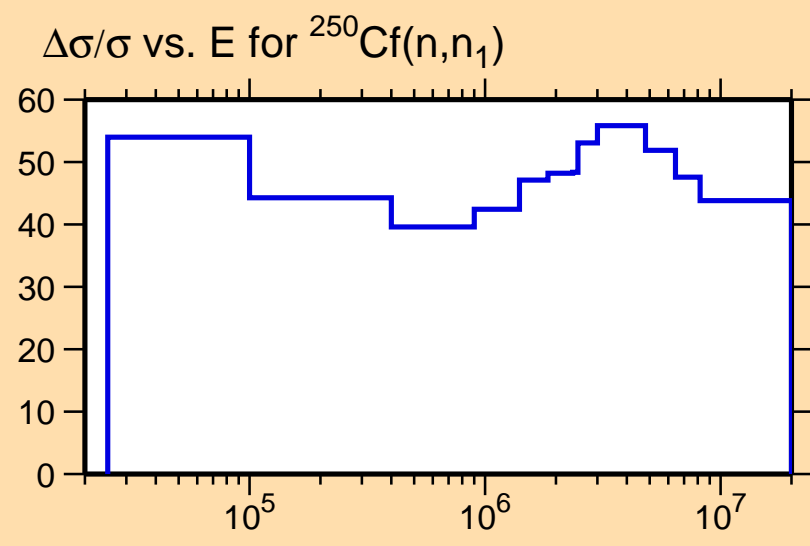




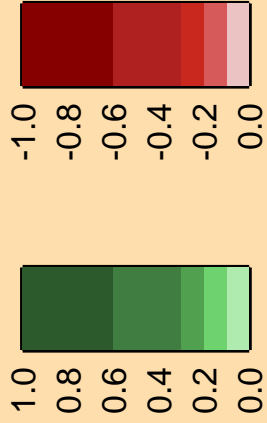
Ordinate scale is %
relative standard deviation.

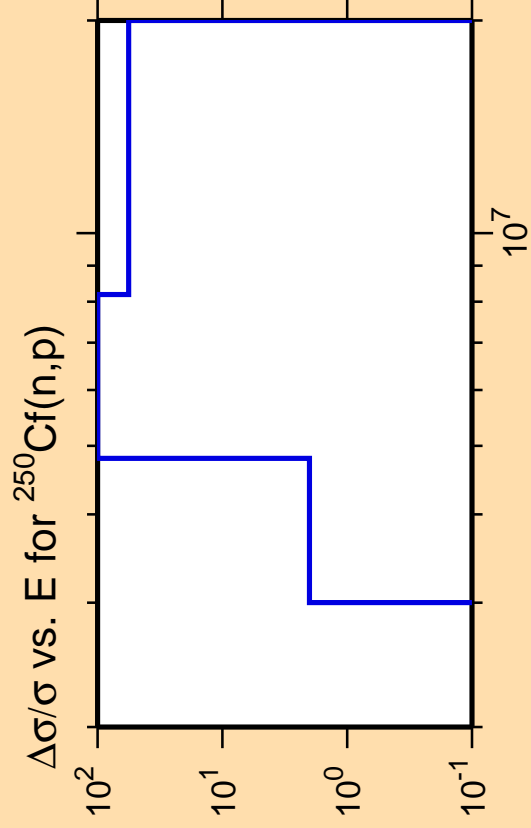
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

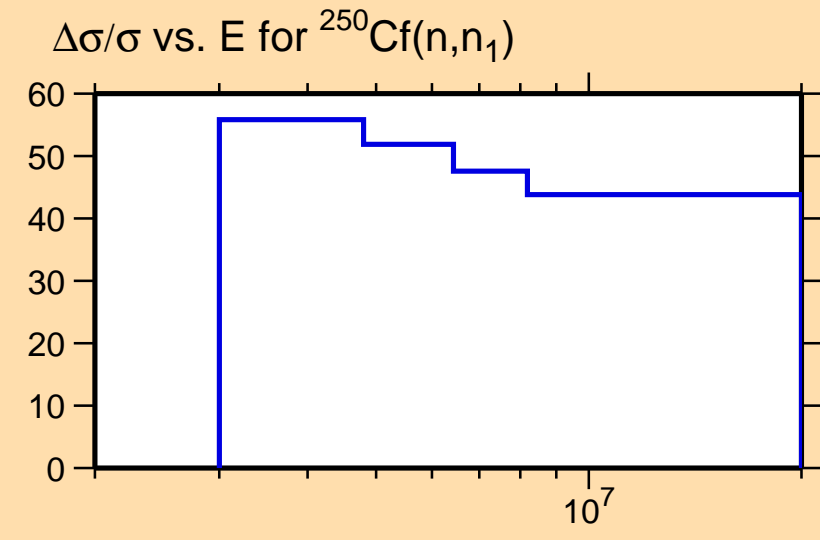




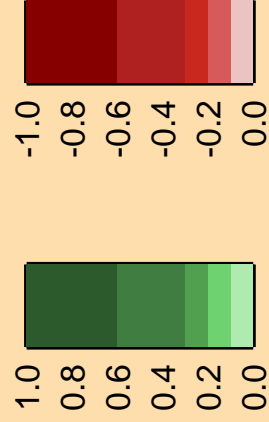
Ordinate scale is %
relative standard deviation.

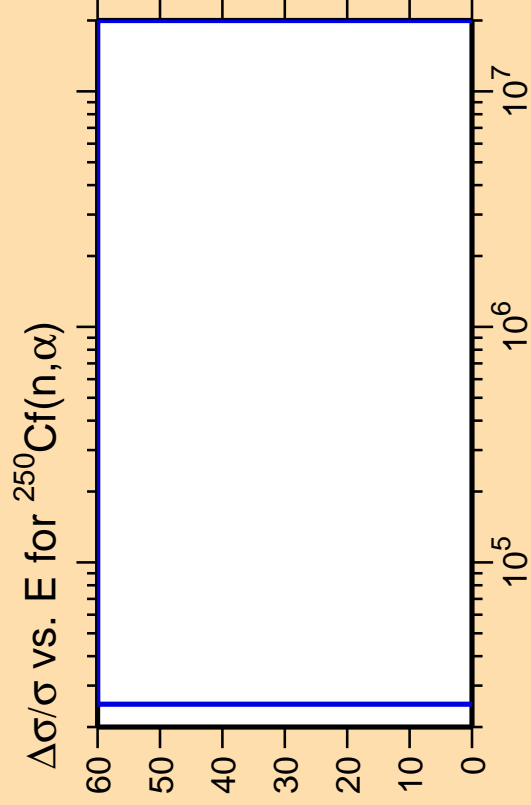
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

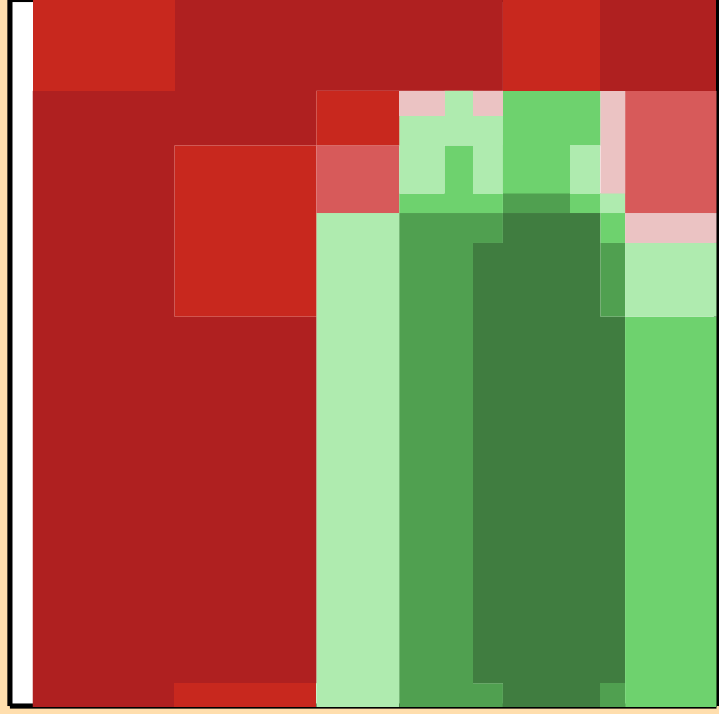
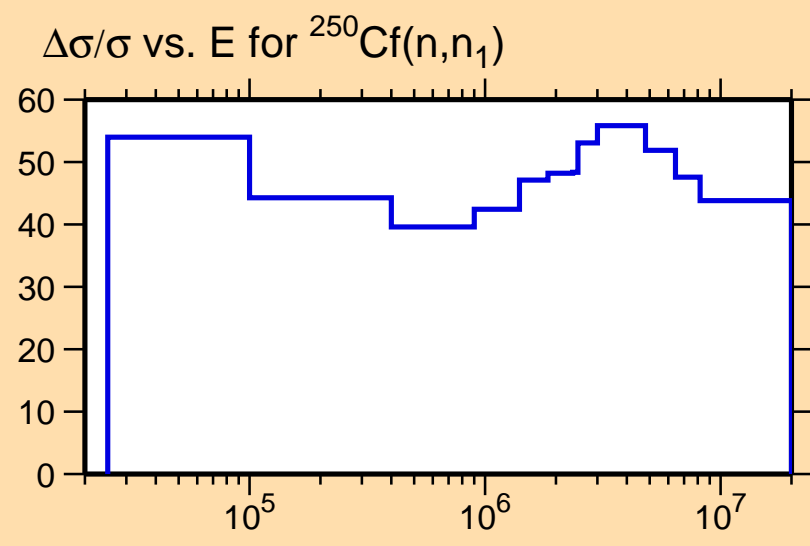




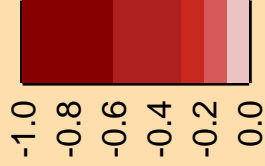
Ordinate scale is %
relative standard deviation.

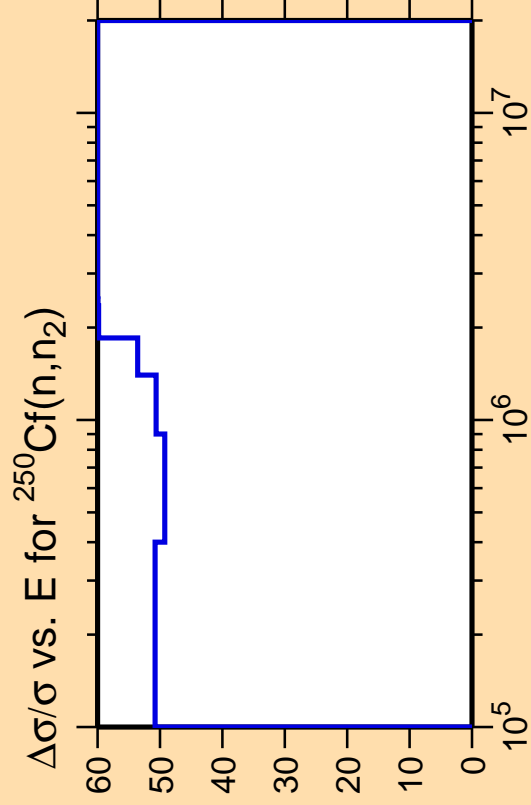
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

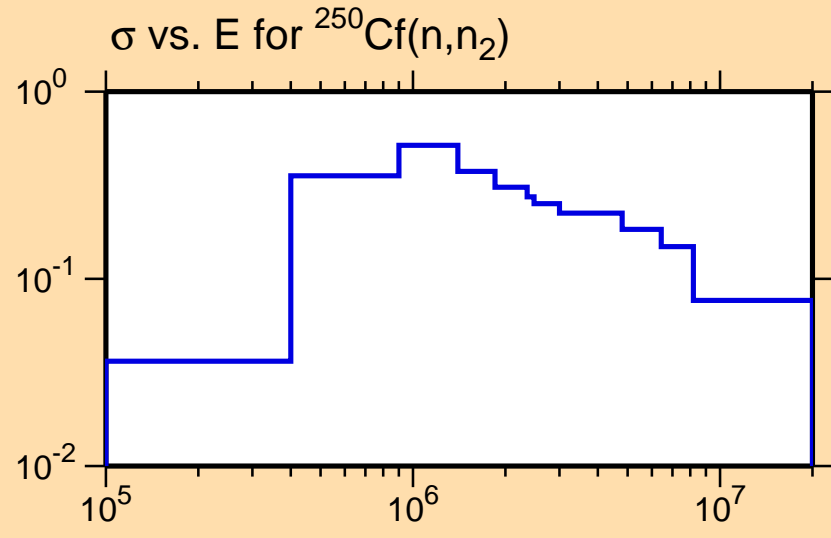




Ordinate scales are % relative standard deviation and barns.

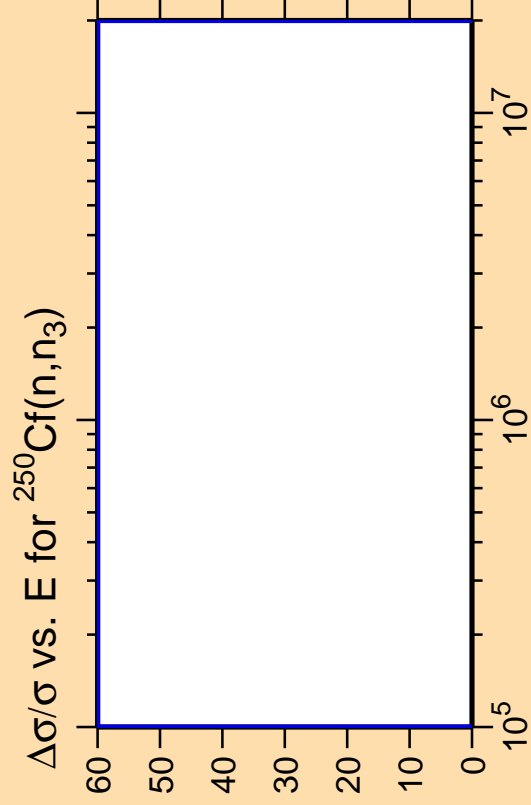
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

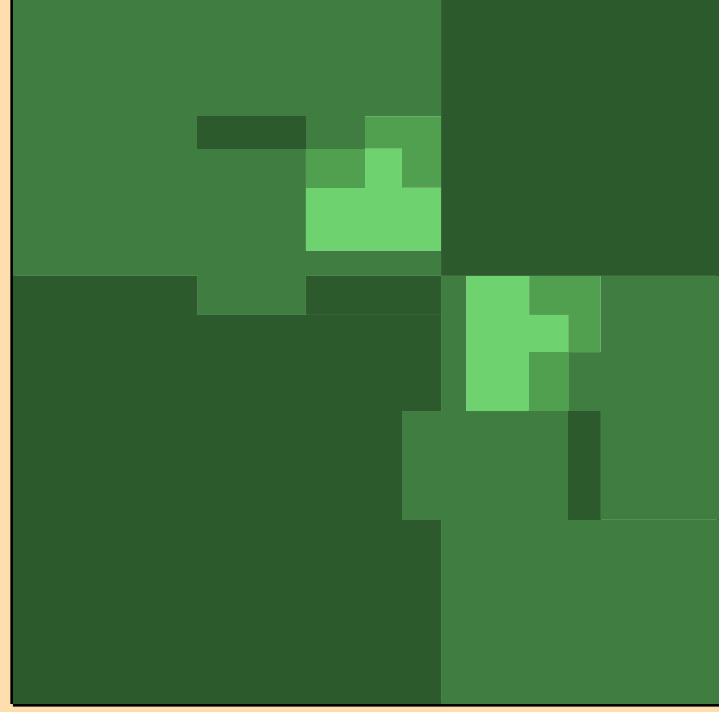
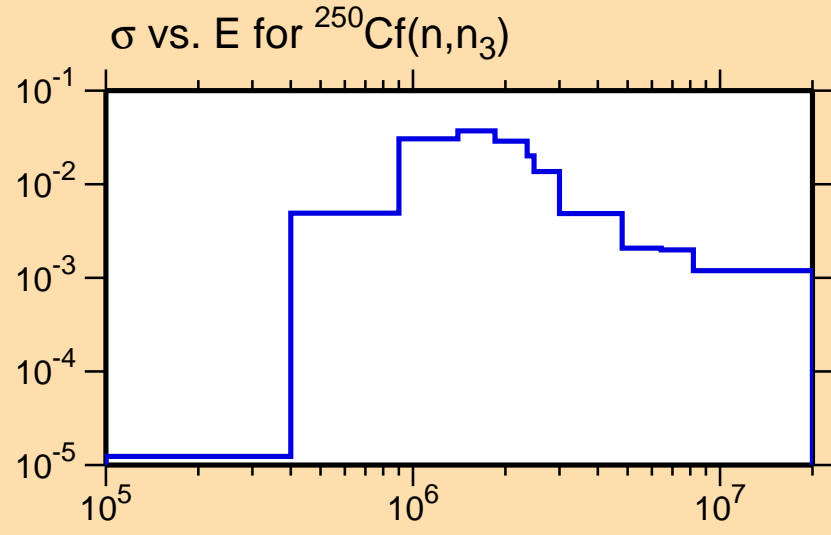




Ordinate scales are % relative standard deviation and barns.

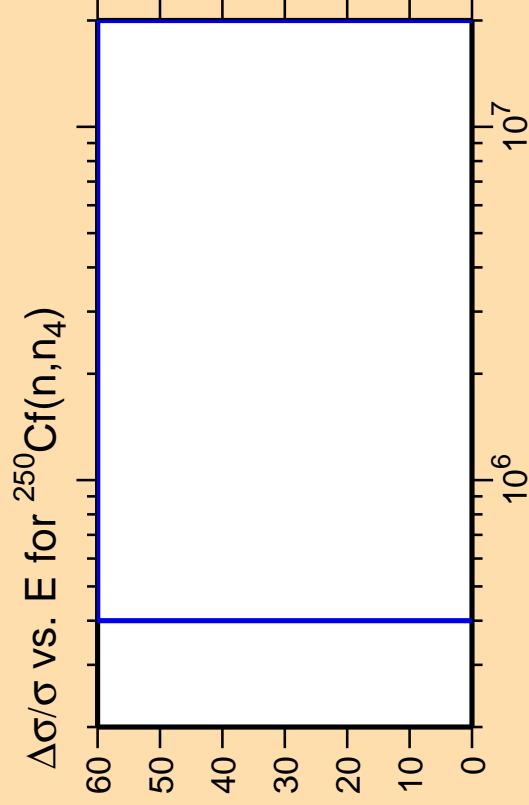
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

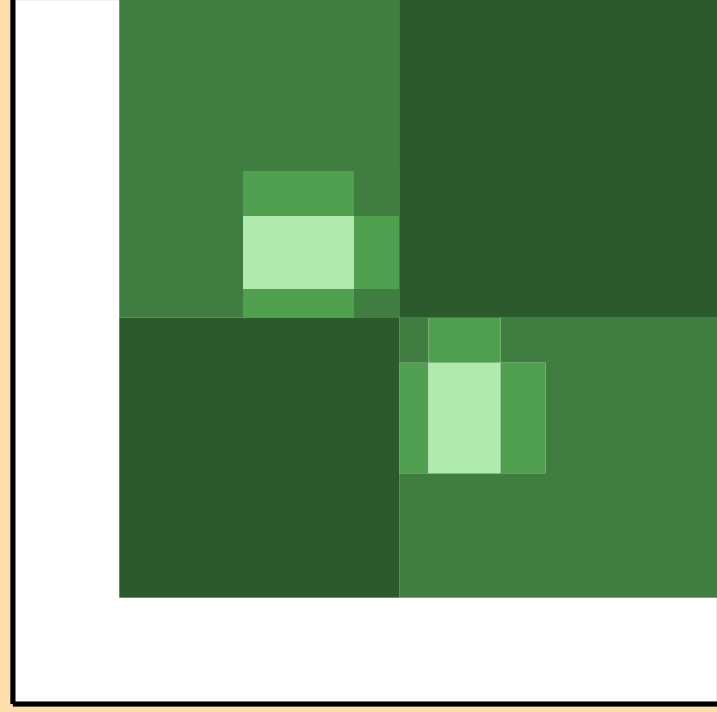
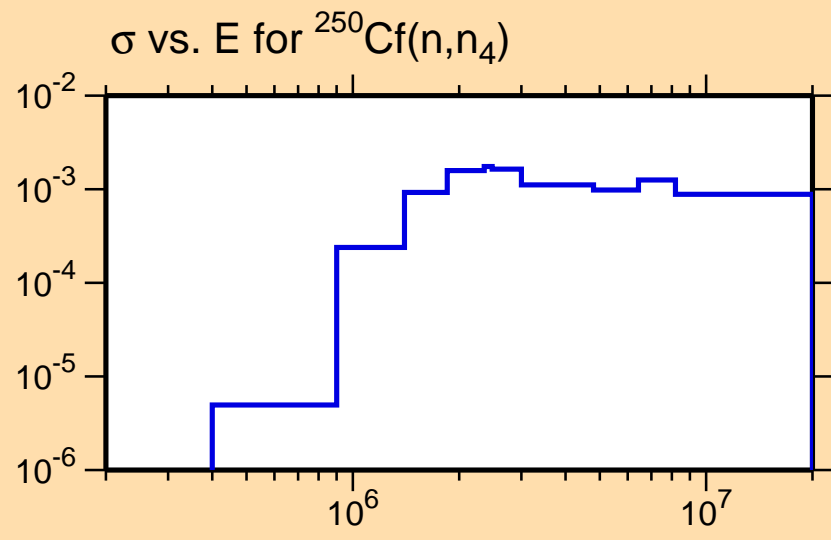




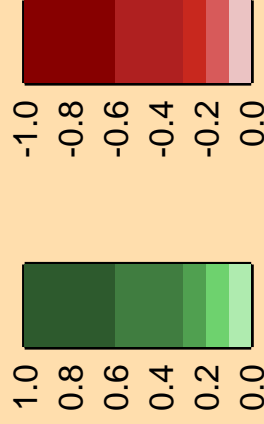
Ordinate scales are % relative standard deviation and barns.

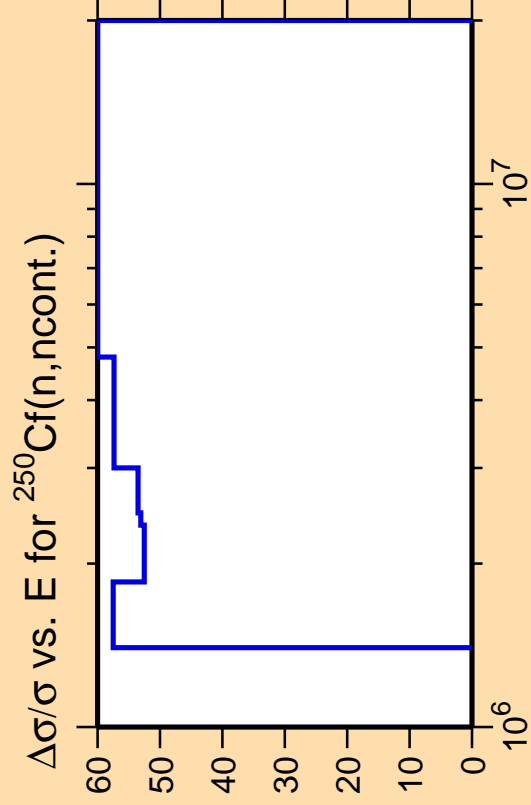
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

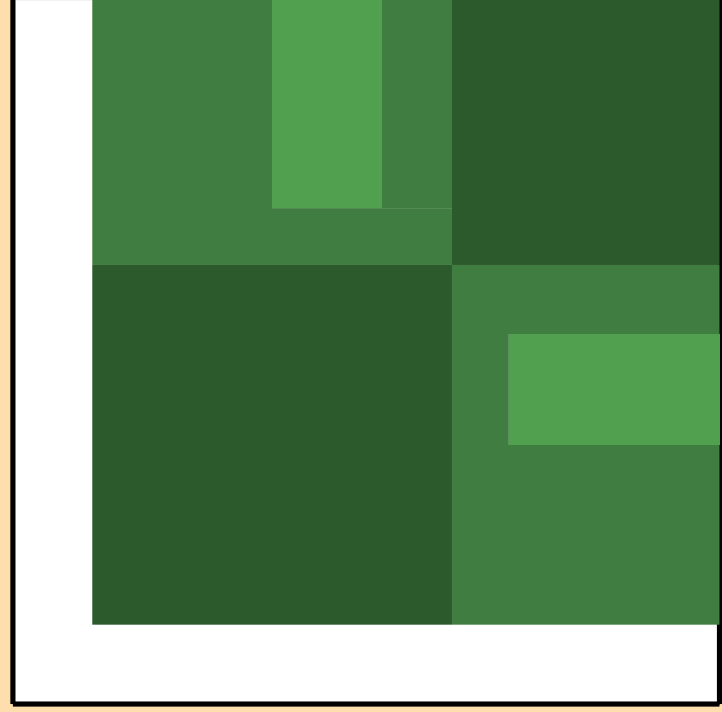
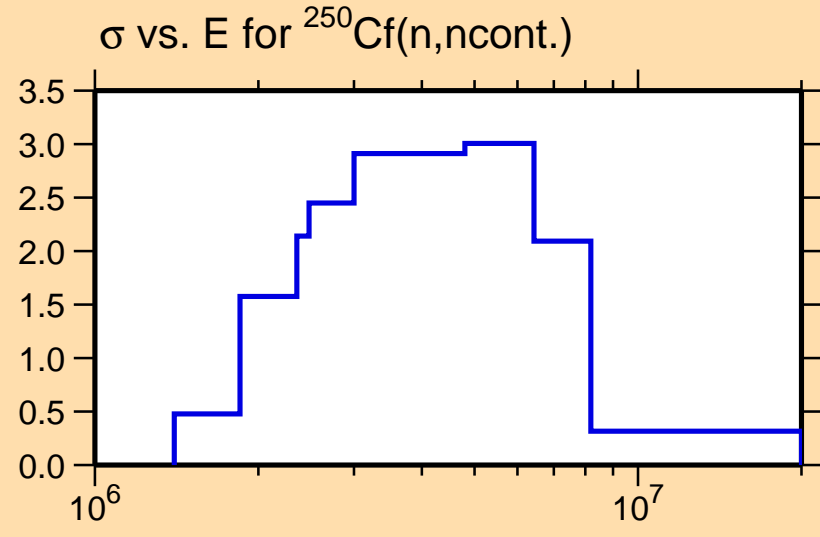




Ordinate scales are % relative standard deviation and barns.

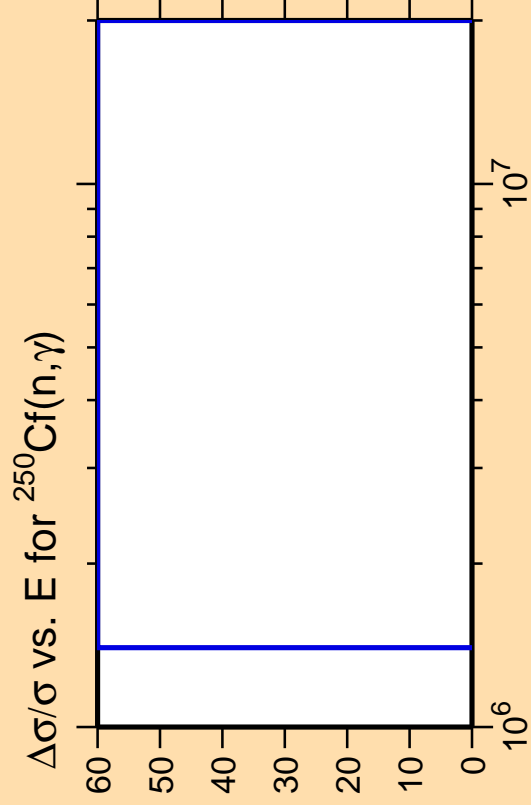
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

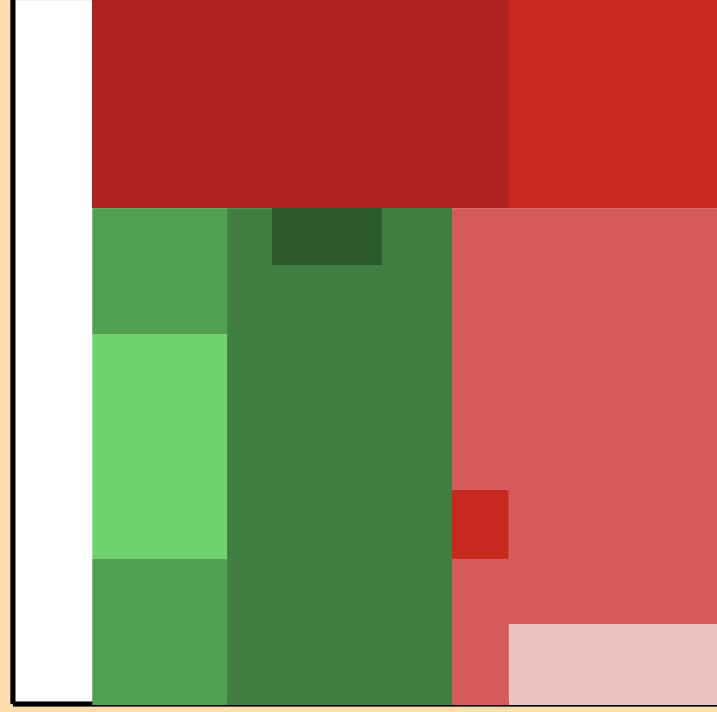
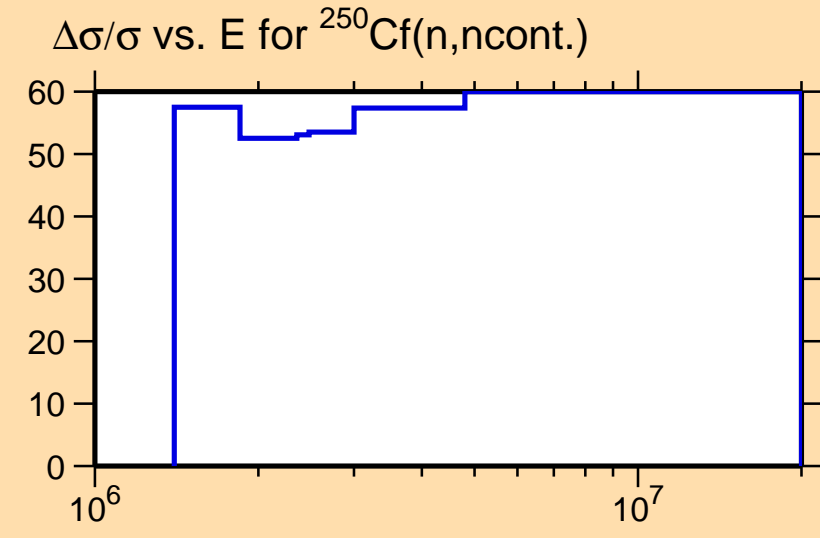




Ordinate scale is %
relative standard deviation.

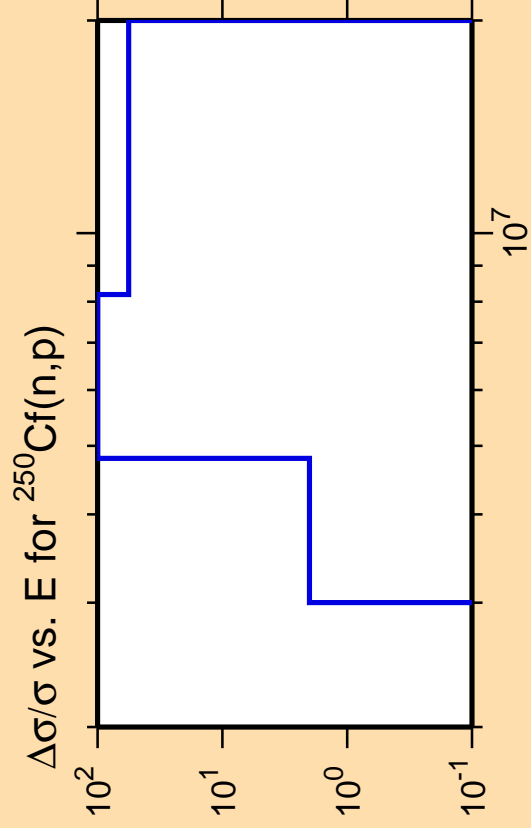
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

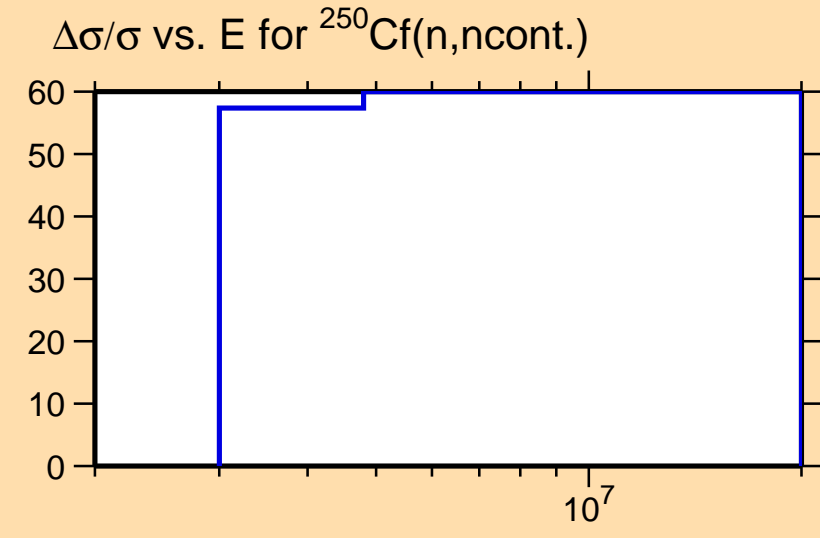




Ordinate scale is %
relative standard deviation.

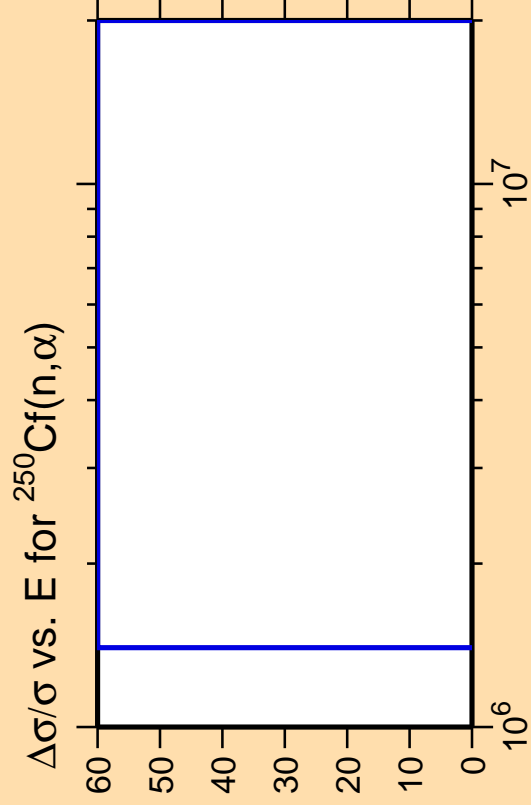
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

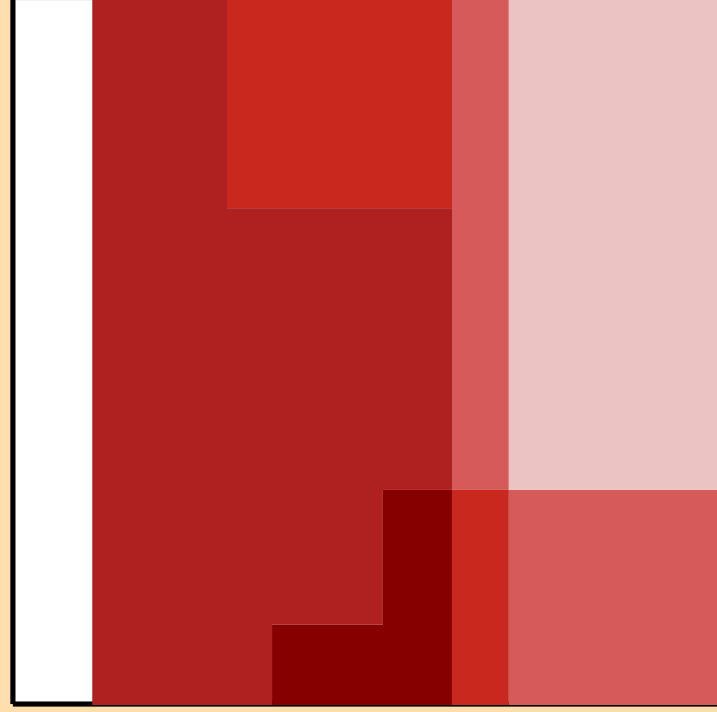
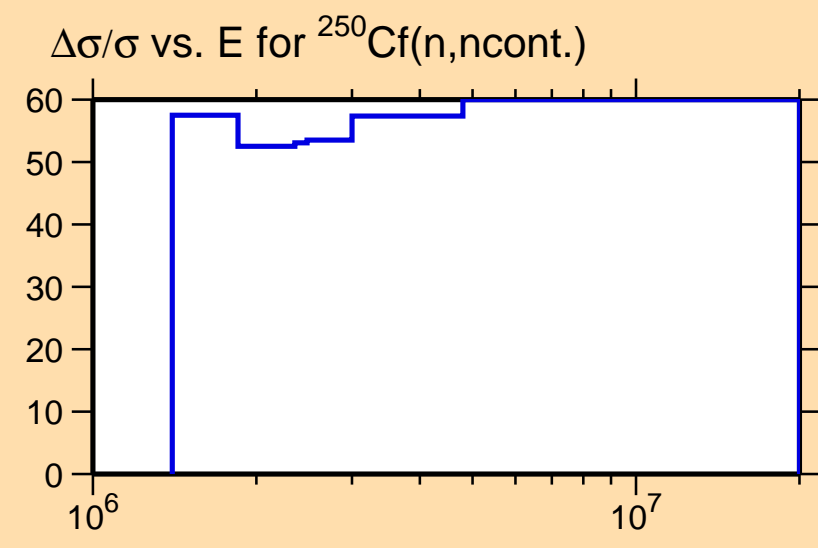




Ordinate scale is %
relative standard deviation.

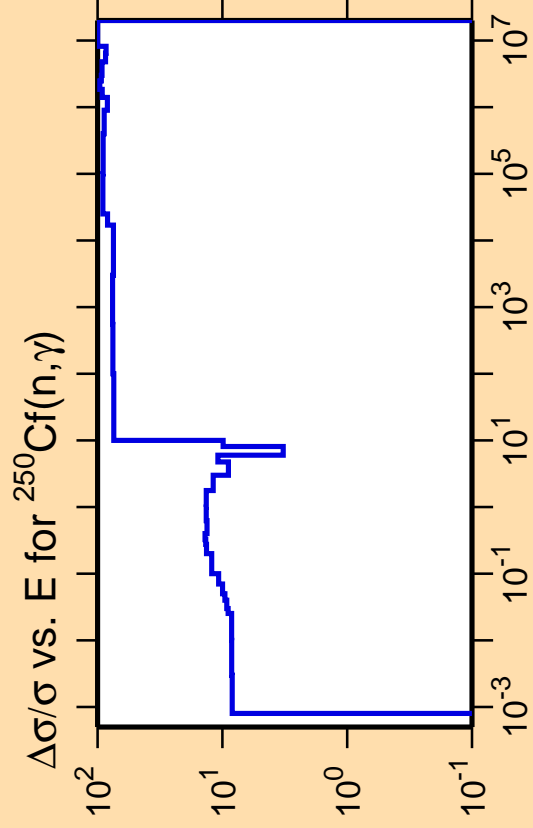
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

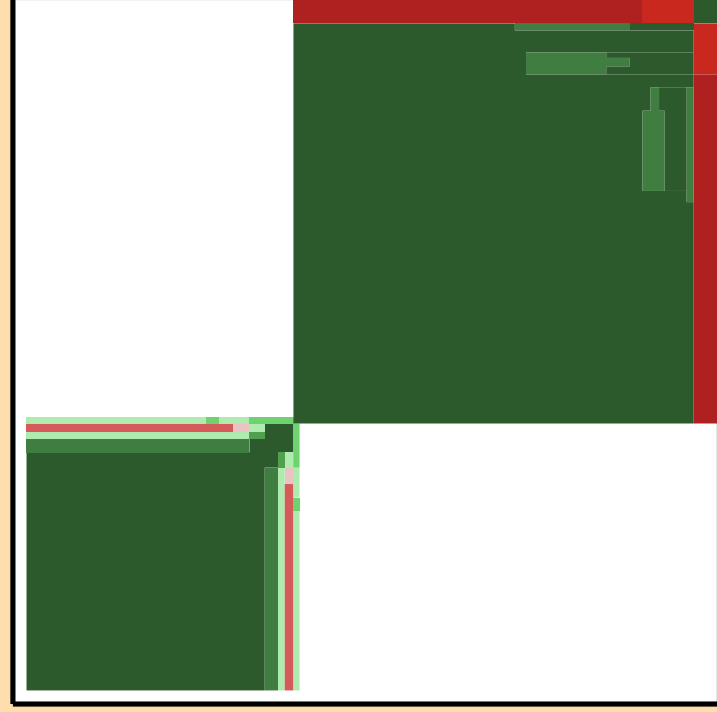
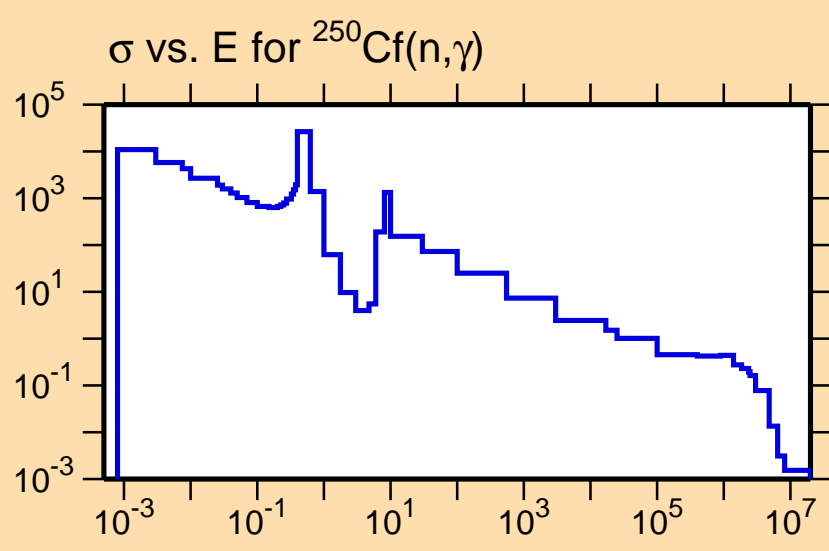




Ordinate scales are % relative standard deviation and barns.

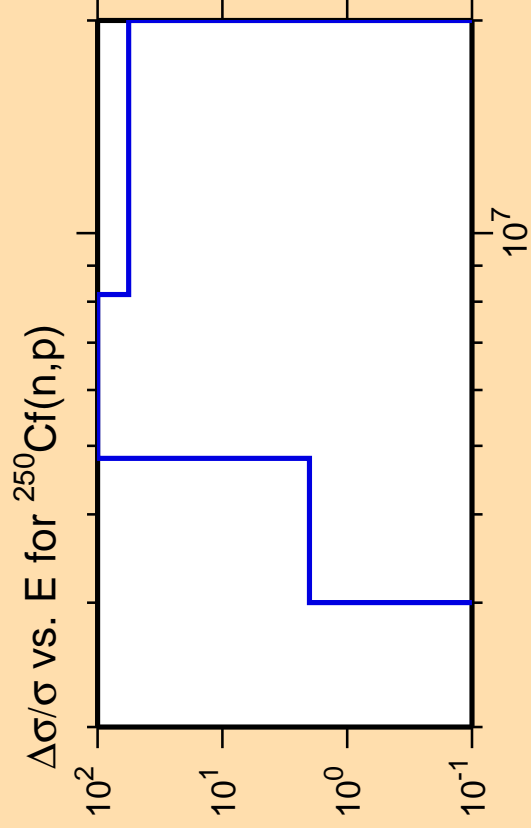
Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



Correlation Matrix

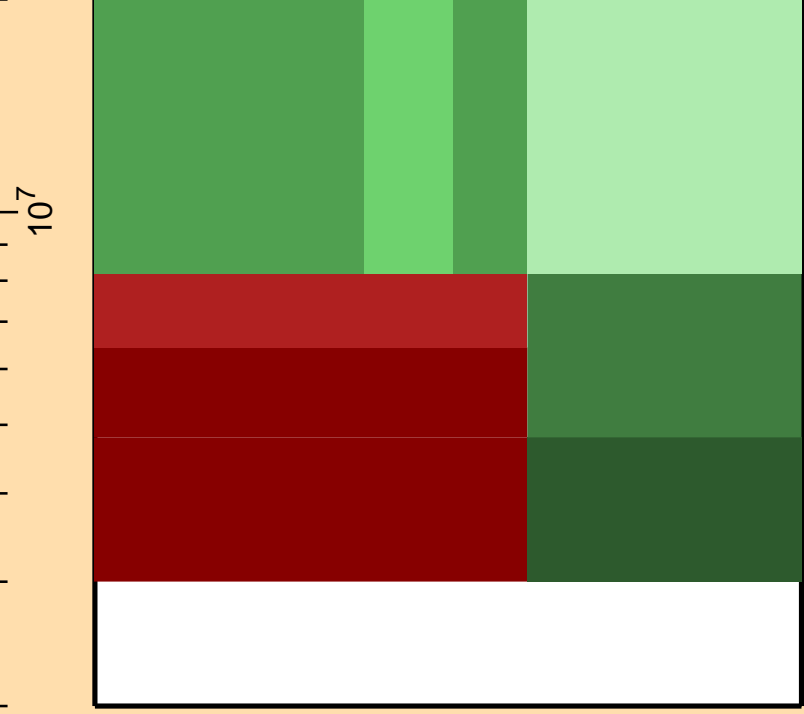
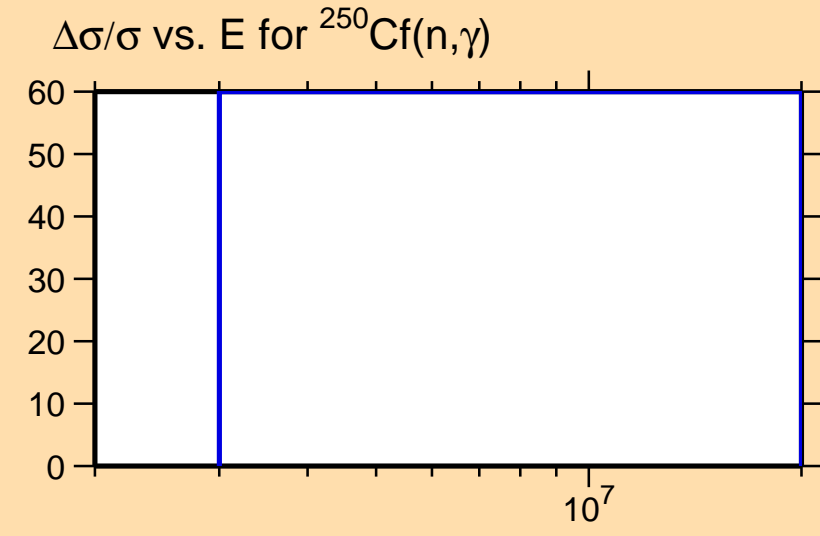




Ordinate scale is %
relative standard deviation.

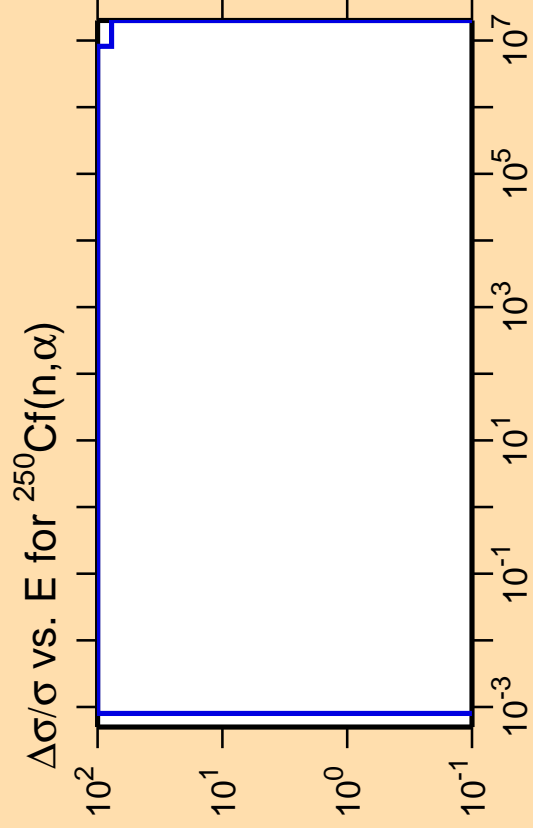
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

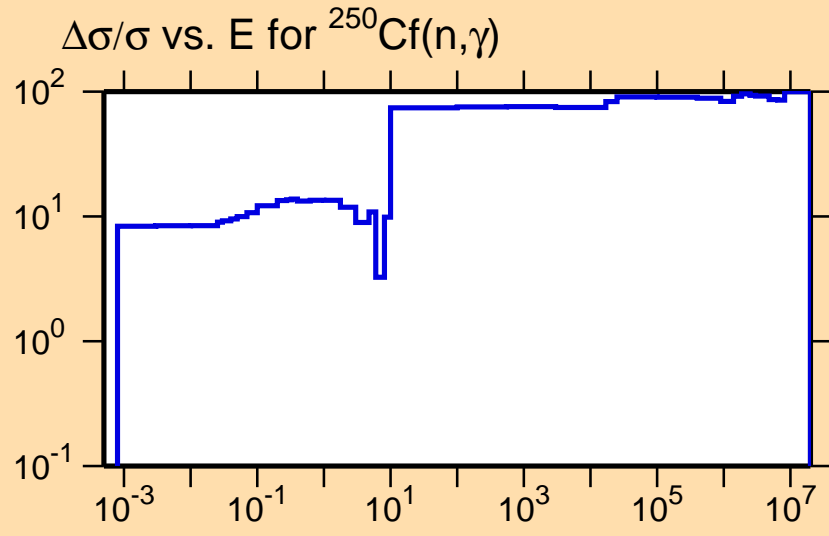




Ordinate scale is %
relative standard deviation.

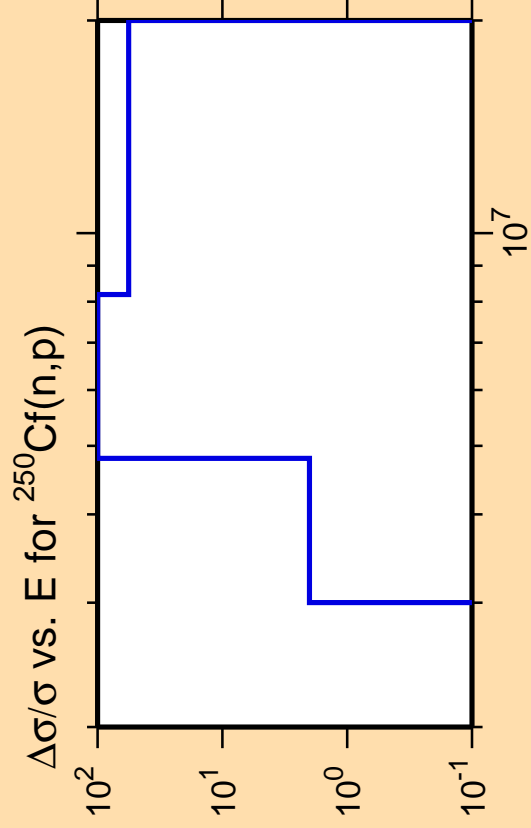
Abscissa scales are energy (eV).

Warning: some uncertainty
data were suppressed.



Correlation Matrix

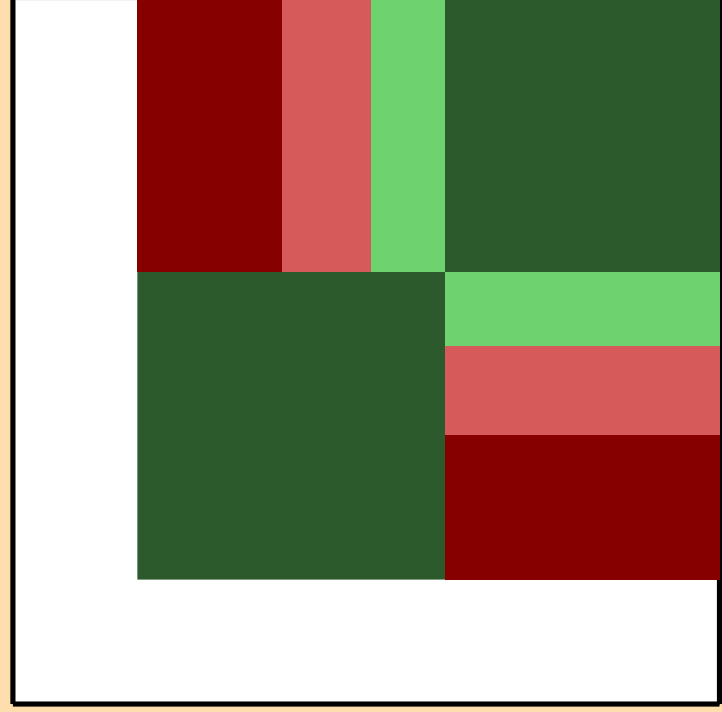
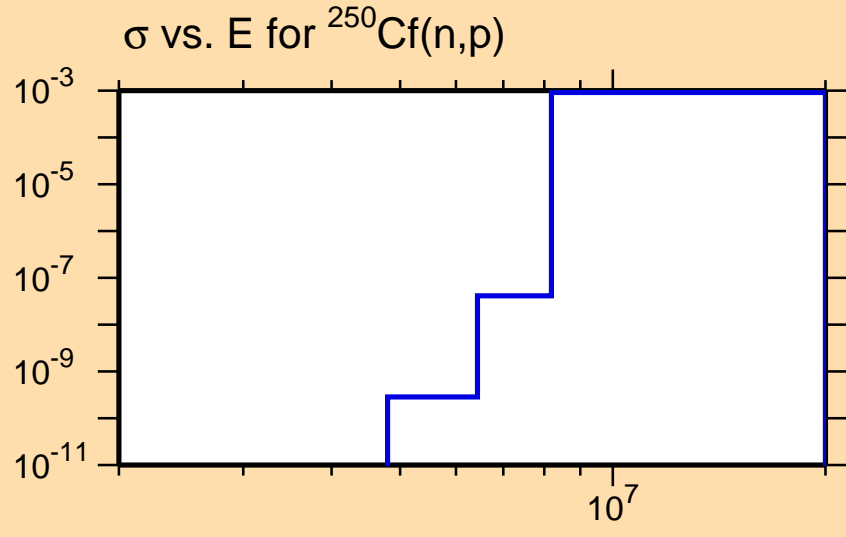




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

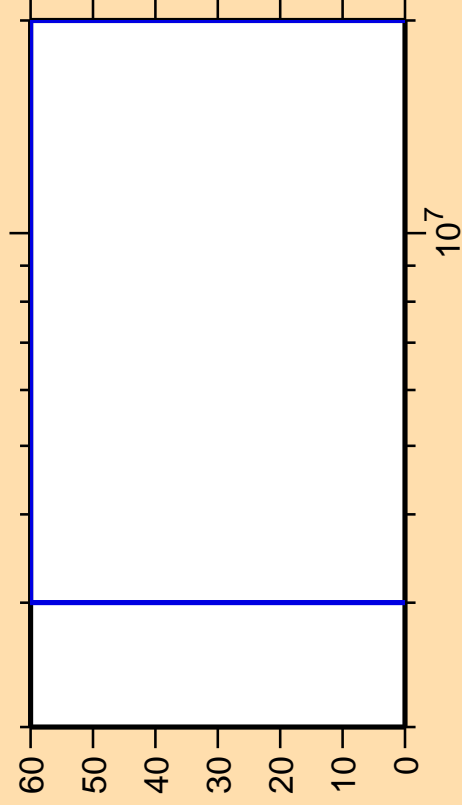
Warning: some uncertainty data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\alpha)$

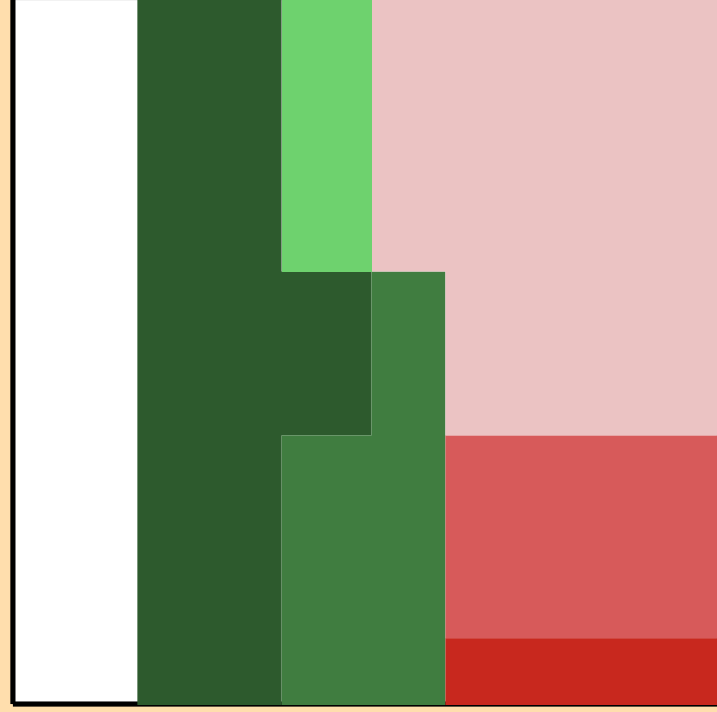
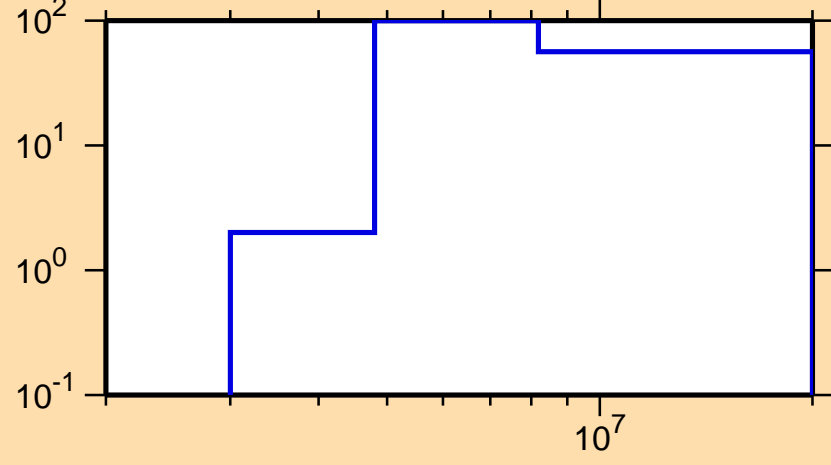


Ordinate scale is %
relative standard deviation.

Abscissa scales are energy (eV).

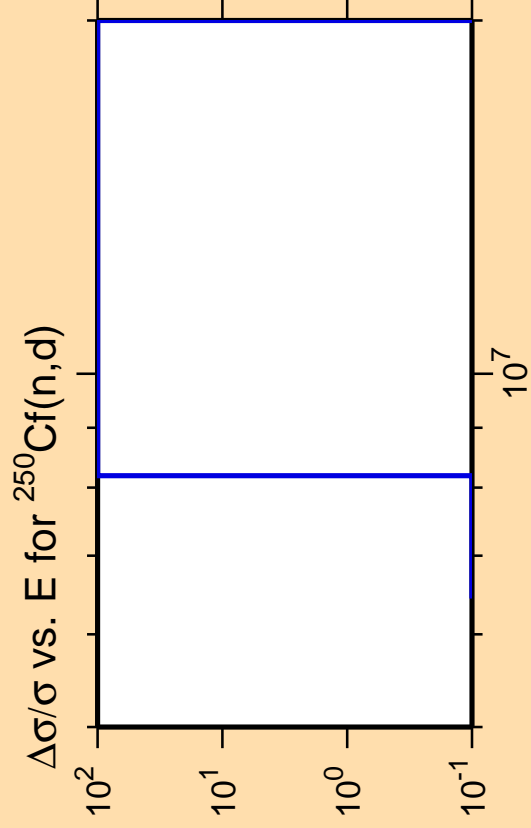
Warning: some uncertainty
data were suppressed.

$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,p)$



Correlation Matrix

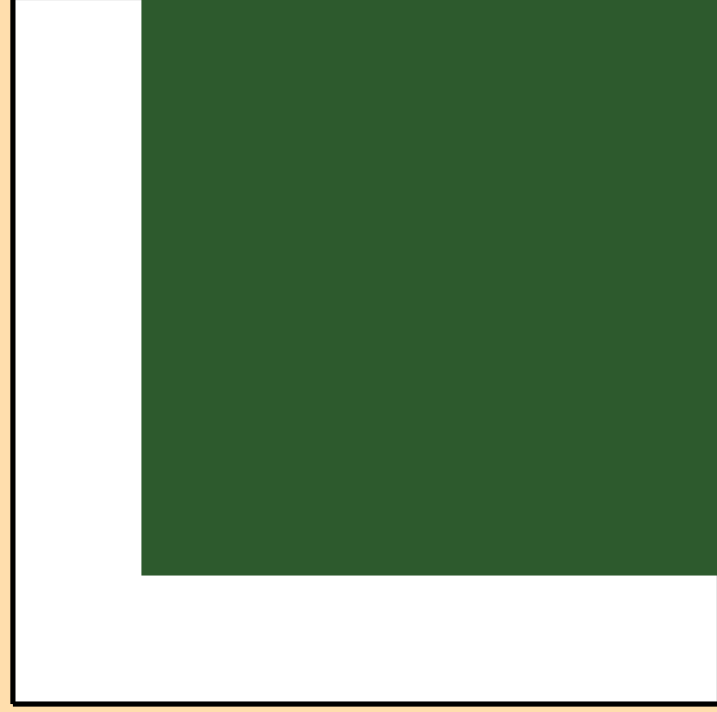
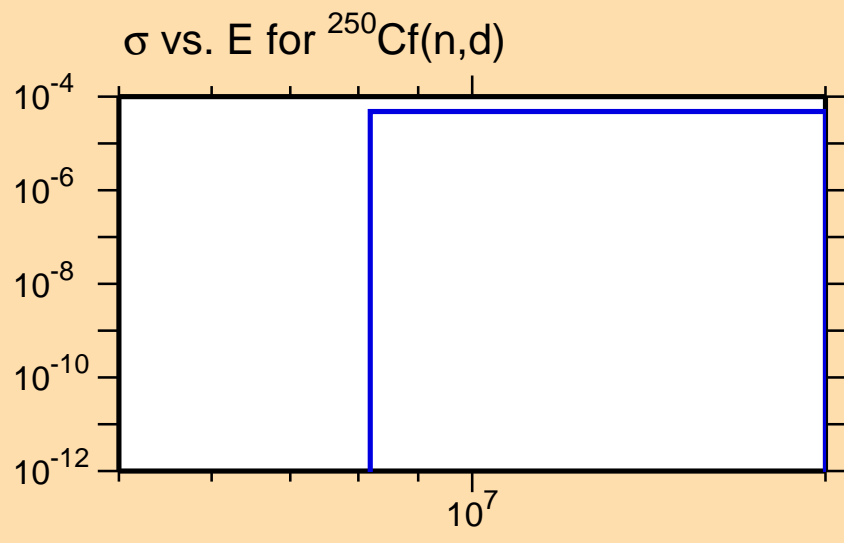




Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

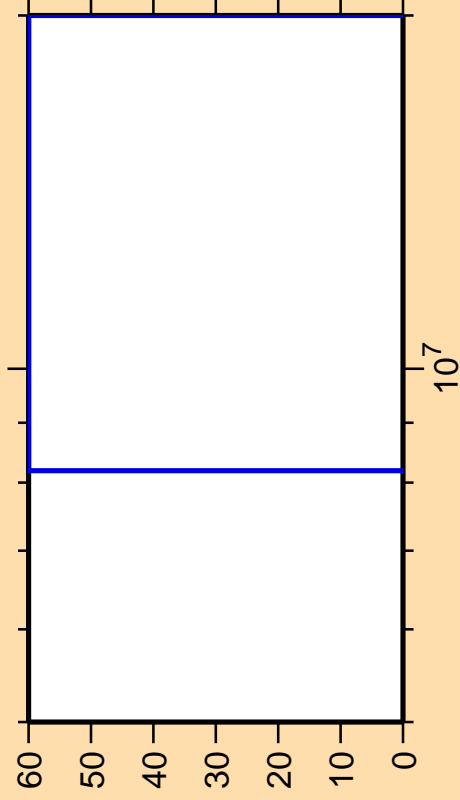
Warning: some uncertainty data were suppressed.



Correlation Matrix



$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,t)$

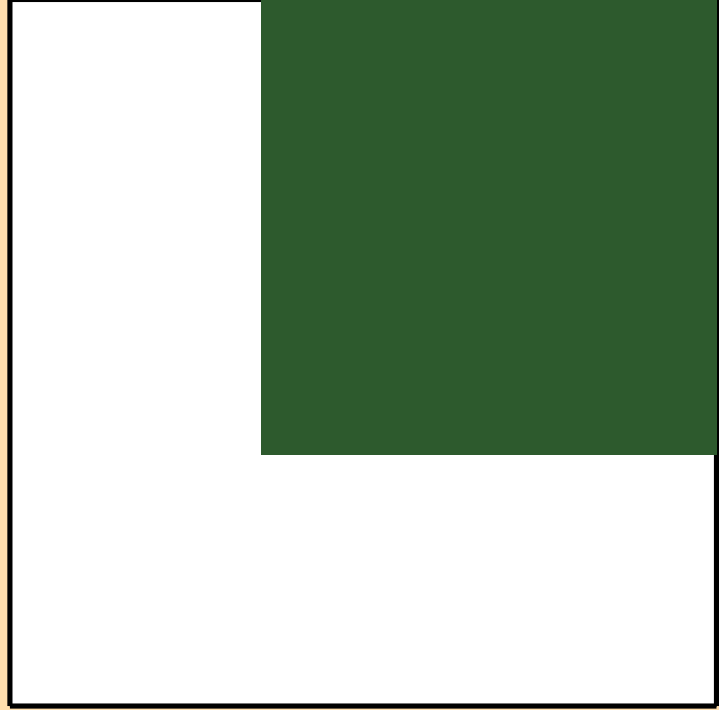
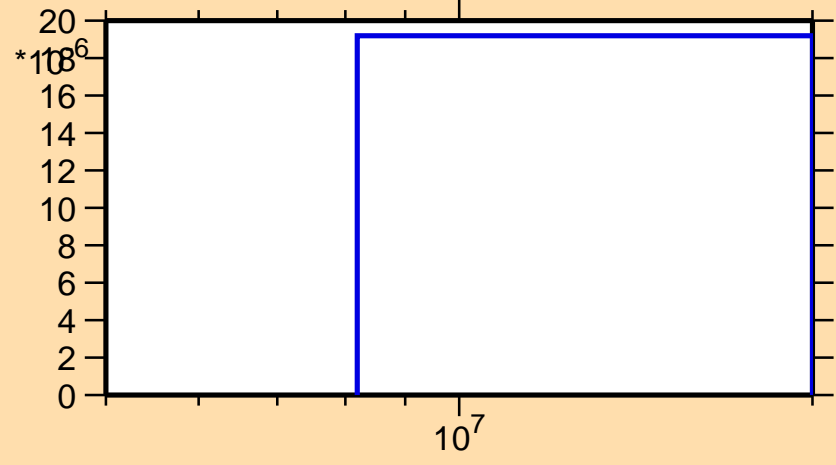


Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.

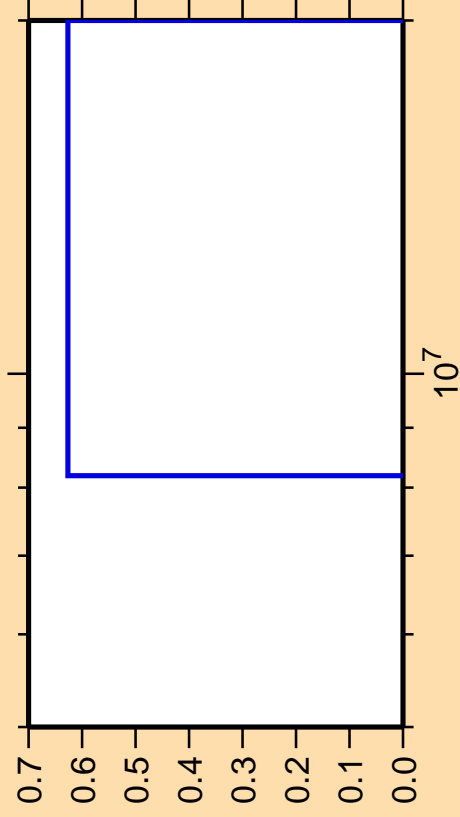
σ vs. E for $^{250}\text{Cf}(n,t)$



Correlation Matrix



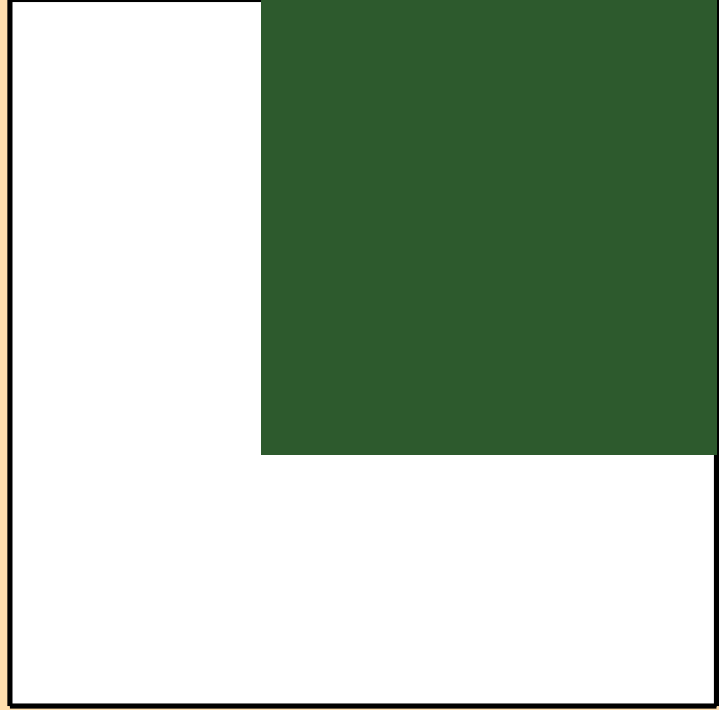
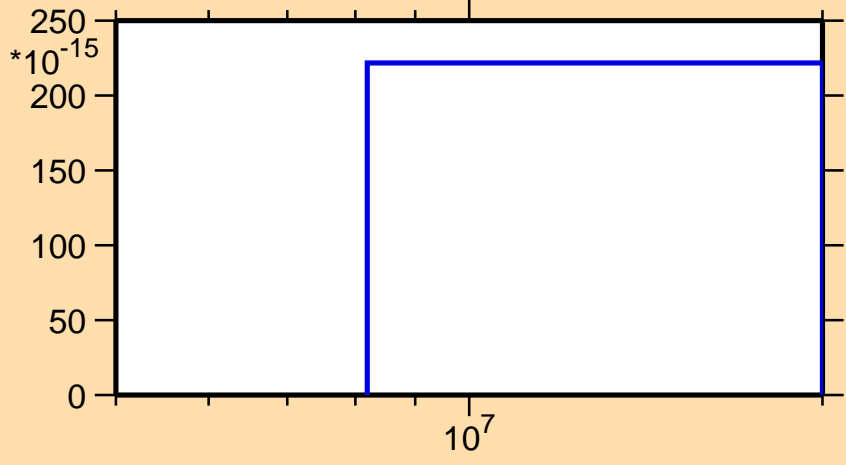
$\Delta\sigma/\sigma$ vs. E for $^{250}\text{Cf}(n,\text{He}3)$



Ordinate scales are % relative standard deviation and barns.

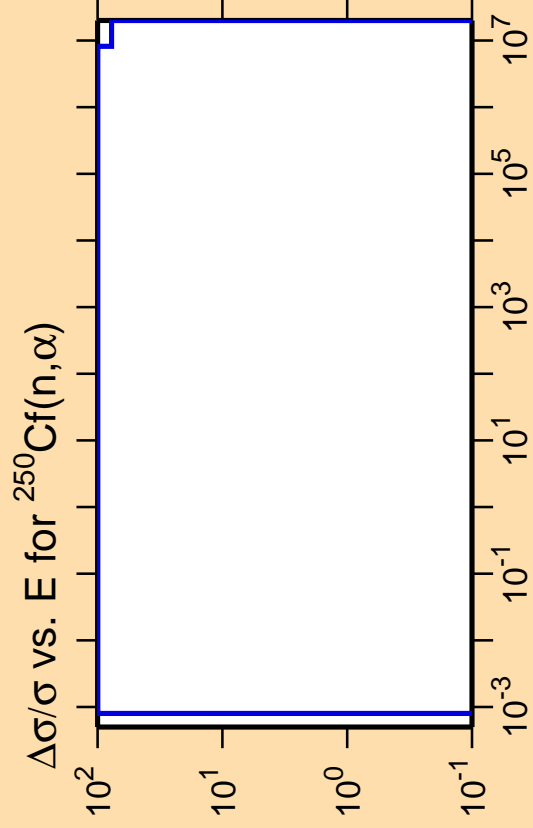
Abscissa scales are energy (eV).

σ vs. E for $^{250}\text{Cf}(n,\text{He}3)$



Correlation Matrix

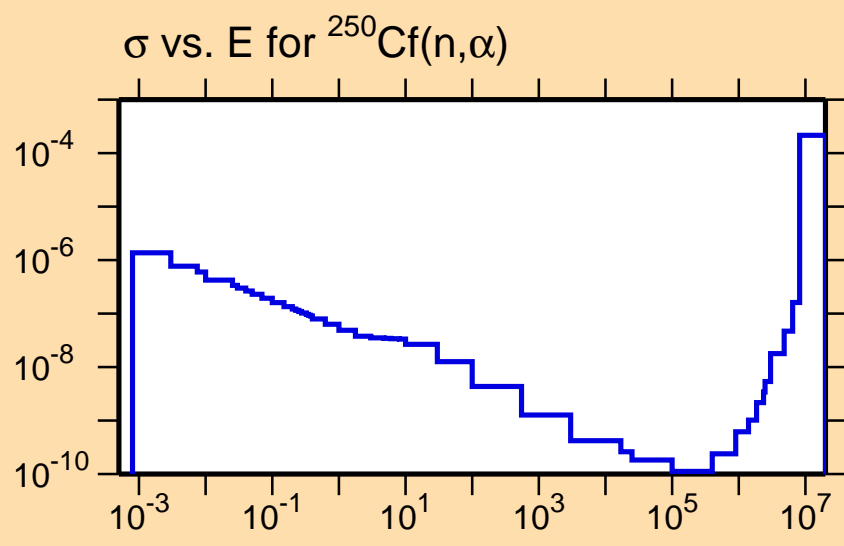




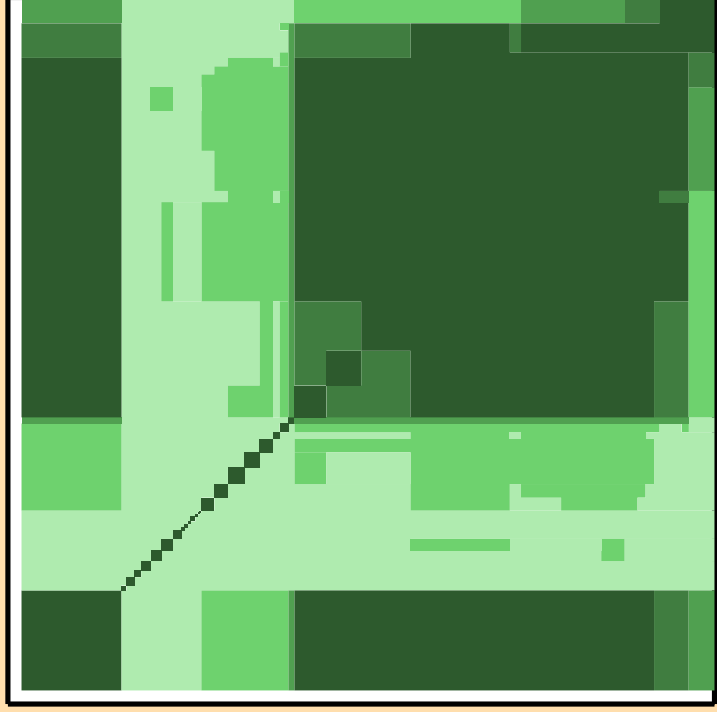
Ordinate scales are % relative standard deviation and barns.

Abscissa scales are energy (eV).

Warning: some uncertainty data were suppressed.



σ vs. E for $^{250}\text{Cf}(n,\alpha)$



Correlation Matrix

