JEFF-3.1 FE-57
Principal cross sections

Cross section (barns)

Energy (MeV)

- total
- absorption
- elastic
- gamma production
JEFF-3.1 FE-57
resonance total cross section

Cross section (barns)

Energy (MeV)
JEFF-3.1 FE-57
resonance total cross section

Energy (MeV) vs. Cross section (barns)
JEFF-3.1 FE-57
resonance total cross section
J\textsc{eff}-3.1 FE-57
resonance total cross section

\begin{figure}
\centering
\includegraphics[width=\textwidth]{figure.png}
\caption{Resonance total cross section for J\textsc{eff}-3.1 FE-57.}
\end{figure}
JEFF-3.1 FE-57
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

capture
JEFF-3.1 FE-57
resonance absorption cross sections
JEFF-3.1 FE-57
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

Capture
JEFF-3.1 FE-57
resonance absorption cross sections

Energy (MeV)

Cross section (barns)

10^{-3}

10^0

10^1

capture
JEFF-3.1 FE-57
Heating

Energy (MeV)

Heating (MeV/reaction)

heating
JEFF-3.1 FE-57 Damage

Energy (MeV) vs. Damage (MeV-barns)

- Energy ranges from $10^{-11}$ to $10^{1}$ MeV.
- Damage ranges from $10^{-7}$ to $10^{-1}$ MeV-barns.

The graph shows the damage as a function of energy, with notable peaks at specific energy levels.
JEFF-3.1 FE-57
Non-threshold reactions

Energy (MeV)

Cross section (barns)

- (n,gma)
- (n,a)
- (n,xa)
JEFF-3.1 FE-57
Inelastic levels

Energy (MeV)

Cross section (barns)

(n,n*16)
(n,n*17)
(n,n*18)
(n,n*19)
(n,n*20)
JEFF-3.1 FE-57
Threshold reactions

Cross section (barns) vs. Energy (MeV) graph showing the threshold reactions for FE-57.
JEFF-3.1 FE-57
Threshold reactions

Energy (MeV)

Cross section (barns)

- (n,n*)p
- (n,n*)d
- (n,2np)
- (n,n*c)
- (n,p)

Energy (MeV)
JEFF-3.1 FE-57
Threshold reactions

Cross section (barns)

Energy (MeV)
JEFF-3.1 FE-57
Threshold reactions

Energy (MeV)

Cross section (barns)

2 4 6 8 10 12 14 16 18 20

<table>
<thead>
<tr>
<th>Cross section (barns)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n,p*1)</td>
</tr>
<tr>
<td>(n,p*2)</td>
</tr>
<tr>
<td>(n,p*3)</td>
</tr>
<tr>
<td>(n,p*4)</td>
</tr>
<tr>
<td>(n,p*5)</td>
</tr>
</tbody>
</table>

2 4 6 8 10 12 14 16 18 20
JEFF-3.1 FE-57
Threshold reactions

Energy (MeV)

Cross section (barns)

0
10
20
30
40
50
60
*10^-3

(n,p*c) (n,d*0) (n,d*1) (n,d*2) (n,d*3)

4 6 8 10 12 14 16 18 20

Energy (MeV)
JEFF-3.1 FE-57
Threshold reactions

Cross section (barns)

Energy (MeV)

*(n,d*4)
*(n,d*5)
*(n,d*c)
*(n,t*0)
*(n,t*1)
JEFF-3.1 FE-57
Threshold reactions

Cross section (barns) vs. Energy (MeV)

(n,t*2)
(n,t*3)
(n,t*4)
(n,t*5)
(n,t*c)
JEFF-3.1 FE-57
Threshold reactions

Cross section (barns) vs. Energy (MeV)

*10^{-3}

(n,a*c)
JEFF-3.1 FE-57
angular distribution for elastic
JEFF-3.1 FE-57
angular distribution for elastic
JEFF-3.1 FE-57
angular distribution for \((n,n^*1)\)
JEFF-3.1 FE-57
angular distribution for (n,n*2)
JEFF-3.1 FE-57
angular distribution for (n,n*3)
JEFF-3.1 FE-57
angular distribution for (n,n*4)
JEFF-3.1 FE-57
angular distribution for (n,n*5)
JEFF-3.1 FE-57
angular distribution for (n,n*6)
JEFF-3.1 FE-57
angular distribution for (n,n*7)
JEFF-3.1 FE-57
angular distribution for (n,n*8)
JEFF-3.1 FE-57
angular distribution for (n,n*9)
JEFF-3.1 FE-57
angular distribution for (n,n*10)
JEFF-3.1 FE-57
angular distribution for (n,n*11)
JEFF-3.1 FE-57
angular distribution for \((n,n'12)\)
JEFF-3.1 FE-57
angular distribution for (n,n*13)
JEFF-3.1 FE-57
angular distribution for (n,n*14)
JEFF-3.1 FE-57
angular distribution for (n,n*15)
JEFF-3.1 FE-57
angular distribution for \((n,n^*16)\)
JEFF-3.1 FE-57
angular distribution for (n,n*17)
JEFF-3.1 FE-57
angular distribution for (n,n*18)
JEFF-3.1 FE-57
angular distribution for (n,n*19)
JEFF-3.1 FE-57
angular distribution for (n,n*20)
JEFF-3.1 FE-57
Neutron emission for (n,x)
JEFF-3.1 FE-57
Neutron emission for (n,2n)
JEFF-3.1 FE-57
Neutron emission for (n,3n)
JEFF-3.1 FE-57
Neutron emission for \((n,n^*)a\)
JEFF-3.1 FE-57
Neutron emission for (n,2n)a
JEFF-3.1 FE-57
Neutron emission for (n,n*)p
JEFF-3.1 FE-57
Neutron emission for \((n,n^*)d\)
JEFF-3.1 FE-57
Neutron emission for (n,2np)
JEFF-3.1 FE-57
Neutron emission for \((n,n^*c)\)
JEFF-3.1 FE-57
Photon emission for \((n,x)\)
JEFF-3.1 FE-57
Photon emission for (n,2n)
JEFF-3.1 FE-57
Photon emission for (n,3n)
JEFF-3.1 FE-57
Photon emission for (n,n*)a
JEFF-3.1 FE-57
Photon emission for (n,2n)a

Prob/MeV

\[ P(E_{\gamma}) \propto \frac{E_{\gamma}^{2}}{E_{n}^{2}} \]

\[ E_{\gamma} (\text{MeV}) \]

\[ E_{n} (\text{MeV}) \]

\[ 0 \]

\[ 10^{-3} \]

\[ 10^{3} \]

\[ 10^{4} \]

\[ 10^{5} \]

\[ 10^{6} \]

\[ 0 \]

\[ 2 \]

\[ 4 \]

\[ 20 \]

\[ 40 \]

\[ 60 \]

\[ 80 \]

\[ 100 \]

\[ 120 \]

\[ 140 \]

\[ 160 \]

\[ 180 \]

\[ 200 \]
JEFF-3.1 FE-57
Photon emission for (n,n*)p

![Graph showing photon emission for (n,n*)p](image)
JEFF-3.1 FE-57
Photon emission for $(n,n^*)d$
JEFF-3.1 FE-57
Photon emission for \((n,2np)\)
JEFF-3.1 FE-57
Photon emission for \( (n,n^*1) \)
JEFF-3.1 FE-57
Photon emission for (n,n*2)
JEFF-3.1 FE-57
Photon emission for (n,n*3)
JEFF-3.1 FE-57
Photon emission for (n,n*5)
JEFF-3.1 FE-57
Photon emission for \((n,n^*6)\)
JEFF-3.1 FE-57
Photon emission for (n,n*7)
JEFF-3.1 FE-57
Photon emission for (n,n*8)
JEFF-3.1 FE-57
Photon emission for \((n,n^*9)\)
JEFF-3.1 FE-57
Photon emission for (n,n*10)
JEFF-3.1 FE-57
Photon emission for (n,n*11)
JEFF-3.1 FE-57
Photon emission for (n,n^12)

\[ P(E) / MeV = E_{\gamma}(MeV) / E_n(MeV) \]
JEFF-3.1 FE-57
Photon emission for (n,n*13)
JEFF-3.1 FE-57
Photon emission for \((n,n'^{14})\)
JEFF-3.1 FE-57
Photon emission for (n,n*15)
JEFF-3.1 FE-57
Photon emission for (n,n*16)
JEFF-3.1 FE-57
Photon emission for (n,n*17)
JEFF-3.1 FE-57
Photon emission for (n,n^*18)
JEFF-3.1 FE-57
Photon emission for (n,n*19)
JEFF-3.1 FE-57
Photon emission for (n,n*20)
JEFF-3.1 FE-57
Photon emission for (n,n*c)
JEFF-3.1 FE-57
Photon emission for (n,gma)
JEFF-3.1 FE-57
Photon emission for (n,2a)
JEFF-3.1 FE-57
Photon emission for (n,2p)
JEFF-3.1 FE-57
Photon emission for (n,pa)
JEFF-3.1 FE-57
Photon emission for (n,p*1)
JEFF-3.1 FE-57
Photon emission for (n,p*2)
JEFF-3.1 FE-57
Photon emission for \((n,p^*3)\)
JEFF-3.1 FE-57
Photon emission for (n,p*4)
JEFF-3.1 FE-57
Photon emission for (n,p*5)
JEFF-3.1 FE-57
Photon emission for (n,p*6)
JEFF-3.1 FE-57
Photon emission for \((n,p*7)\)
JEFF-3.1 FE-57
Photon emission for (n,p*9)
JEFF-3.1 FE-57
Photon emission for (n,p*10)
JEFF-3.1 FE-57
Photon emission for \((n,p^*c)\)
JEFF-3.1 FE-57
Photon emission for (n,d*1)
JEFF-3.1 FE-57
Photon emission for (n,d*2)
JEFF-3.1 FE-57
Photon emission for (n,d*3)
JEFF-3.1 FE-57
Photon emission for (n,d*4)
JEFF-3.1 FE-57
Photon emission for (n,d*5)
JEFF-3.1 FE-57
Photon emission for (n,d*c)
JEFF-3.1 FE-57
Photon emission for (n,t*1)
JEFF-3.1 FE-57
Photon emission for \((n,t^*2)\)
JEFF-3.1 FE-57
Photon emission for (n,t*3)
JEFF-3.1 FE-57
Photon emission for (n,t*4)
JEFF-3.1 FE-57
Photon emission for (n,t*5)
JEFF-3.1 FE-57
Photon emission for (n,t*c)
JEFF-3.1 FE-57
Photon emission for (n,he3*1)
JEFF-3.1 FE-57
Photon emission for (n,he3*3)
JEFF-3.1 FE-57
Photon emission for (n,he3*4)
JEFF-3.1 FE-57
Photon emission for (n,he3*5)
JEFF-3.1 FE-57
Photon emission for (n,he3*c)
JEFF-3.1 FE-57
Photon emission for (n,a*1)
JEFF-3.1 FE-57
Photon emission for \((n,a^2)\)
JEFF-3.1 FE-57
Photon emission for (n,a*4)
JEFF-3.1 FE-57
Photon emission for \((n,a^\ast 5)\)
JEFF-3.1 FE-57
Photon emission for (n,a*6)
JEFF-3.1 FE-57
Photon emission for (n,a*7)
JEFF-3.1 FE-57
Photon emission for (n,a*8)
JEFF-3.1 FE-57
Photon emission for (n,a*9)
JEFF-3.1 FE-57
Photon emission for (n,a*10)
JEFF-3.1 FE-57
Photon emission for (n,a*c)
JEFF-3.1 FE-57
thermal capture photon spectrum

Gamma Energy (MeV)

Gamma Prod (barns/MeV)
JEFF-3.1 FE-57
14 MeV photon spectrum
JEFF-3.1 FE-57
Recoil Heating

Energy (MeV)

Heating (MeV/reaction)

recoil heating
JEFF-3.1 FE-57
protons from (n,x)
JEFF-3.1 FE-57
protons from (n,n*)p
JEFF-3.1 FE-57
protons from (n,2np)
JEFF-3.1 FE-57
protons from (n,2p)
JEFF-3.1 FE-57
protons from (n,pa)
JEFF-3.1 FE-57
angular distribution for (n,p*0) proton
JEFF-3.1 FE-57
angular distribution for (n,p*1) proton
JEFF-3.1 FE-57
angular distribution for (n,p*2) proton
JEFF-3.1 FE-57
angular distribution for (n,p*3) proton
JEFF-3.1 FE-57
angular distribution for (n,p*4) proton
JEFF-3.1 FE-57
angular distribution for (n,p*5) proton
JEFF-3.1 FE-57
angular distribution for (n,p*6) proton
JEFF-3.1 FE-57
angular distribution for (n,p*7) proton
JEFF-3.1 FE-57
angular distribution for (n,p*8) proton
JEFF-3.1 FE-57
angular distribution for (n,p*9) proton
JEFF-3.1 FE-57
angular distribution for (n,p*10) proton
JEFF-3.1 FE-57
protons from (n,p*c)
JEFF-3.1 FE-57
deuterons from (n,x)
JEFF-3.1 FE-57
deuterons from (n,n*)d
JEFF-3.1 FE-57
angular distribution for (n,d*0) deuteron
JEFF-3.1 FE-57
angular distribution for (n,d*1) deuteron
JEFF-3.1 FE-57
angular distribution for (n,d*2) deuteron
JEFF-3.1 FE-57
angular distribution for (n,d*3) deuteron

![Graph showing the angular distribution for (n,d*3) deuteron. The axes are labeled: Energy (MeV) on the x-axis, Cosine on the y-axis, and Prob/Cos on the z-axis. The graph appears to show a 3D plot with variations in the angular distribution across different energy levels.]
JEFF-3.1 FE-57
angular distribution for (n,d*4) deuteron
JEFF-3.1 FE-57
angular distribution for (n,d*5) deuteron
JEFF-3.1 FE-57
deuterons from \((n,d^*c)\)
JEFF-3.1 FE-57
tritons from \( (n,x) \)
JEFF-3.1 FE-57
angular distribution for \((n, t^*0)\) triton
JEFF-3.1 FE-57
angular distribution for (n,t*1) triton
JEFF-3.1 FE-57
angular distribution for (n,t*2) triton
JEFF-3.1 FE-57
angular distribution for (n,t*3) triton
JEFF-3.1 FE-57
angular distribution for (n,t*4) triton
JEFF-3.1 FE-57
angular distribution for (n,t*5) triton
JEFF-3.1 FE-57
tritons from (n,t*c)
JEFF-3.1 FE-57
he3s from (n,x)
JEFF-3.1 FE-57
angular distribution for (n,he3*0) 3he
JEFF-3.1 FE-57
angular distribution for (n,he3*1) 3he
JEFF-3.1 FE-57
angular distribution for (n,he3*2) 3he
JEFF-3.1 FE-57
angular distribution for (n,he3*3) 3he
JEFF-3.1 FE-57
angular distribution for (n,he3*4) 3he
JEFF-3.1 FE-57
angular distribution for (n,he3*5) 3he
JEFF-3.1 FE-57
he3s from (n,he3*c)
JEFF-3.1 FE-57
alphas from (n,x)
JEFF-3.1 FE-57
alphas from (n,n*)a
JEFF-3.1 FE-57
alphas from (n,2n)a
JEFF-3.1 FE-57
alphas from (n,2a)
JEFF-3.1 FE-57
alphas from (n,pa)
JEFF-3.1 FE-57
angular distribution for (n,α*0) alpha
JEFF-3.1 FE-57
angular distribution for (n,a*1) alpha
JEFF-3.1 FE-57
angular distribution for \((n,a^2)\) alpha
JEFF-3.1 FE-57
angular distribution for (n,α^3) alpha
JEFF-3.1 FE-57
angular distribution for (n,a*4) alpha
JEFF-3.1 FE-57
angular distribution for (n,a*5) alpha

Probl|Cos

10^0

Energy (MeV)

1.0 0.5 0.0 0 1 2 3 4 5 6 7 8 9 10 11 12 14 16 18 20

Cosine

1.0 0.5 0.0 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20

Prob^|Cos
JEFF-3.1 FE-57
angular distribution for \((n, a^*6)\) alpha
JEFF-3.1 FE-57
angular distribution for (n,α^7) alpha
JEFF-3.1 FE-57
angular distribution for (n,a*8) alpha
JEFF-3.1 FE-57
angular distribution for \((n, a^*9)\) alpha
JEFF-3.1 FE-57
angular distribution for (n,a*10) alpha
JEFF-3.1 FE-57
alphas from (n,a*c)