

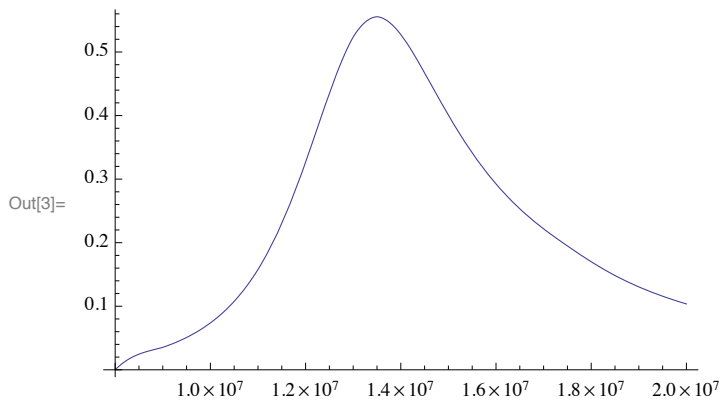
# Photonuclear Xsections

**Au:**

**Au-197**

```
In[1]:= audata = {{8 000 000.0, 0.0}, {8 500 000.0, 0.0245834}, {9 000 000.0, 0.035304},  
                {9 500 000.0, 0.0508757}, {1.0 * 107, 0.0737797}, {1.05 * 107, 0.107709},  
                {1.1 * 107, 0.157823}, {1.15 * 107, 0.229886}, {1.2 * 107, 0.326109},  
                {1.25 * 107, 0.435065}, {1.3 * 107, 0.523603}, {1.35 * 107, 0.555451},  
                {1.4 * 107, 0.52742}, {1.45 * 107, 0.466848}, {1.5 * 107, 0.400418},  
                {1.55 * 107, 0.341115}, {1.6 * 107, 0.292264}, {1.65 * 107, 0.253157},  
                {1.7 * 107, 0.221993}, {1.75 * 107, 0.194945}, {1.8 * 107, 0.169994},  
                {1.85 * 107, 0.148231}, {1.9 * 107, 0.130425}, {1.95 * 107, 0.115779},  
                {2.0 * 107, 0.103611}};
```

```
In[2]:= Au = Interpolation[audata];  
Plot[Au[x], {x, First[audata][[1]], Last[audata][[1]]}]
```



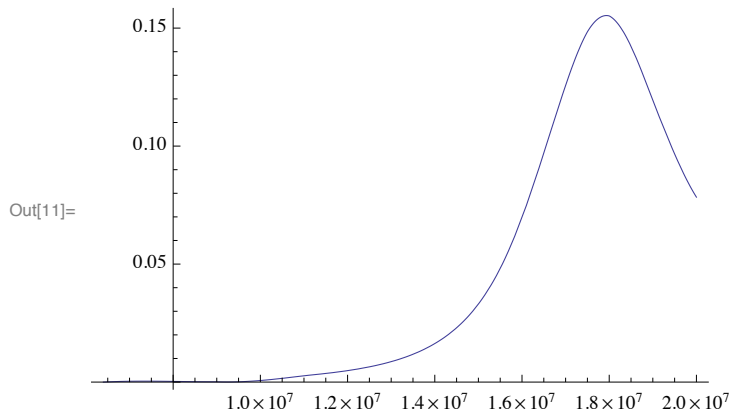
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In[8]:= Integrate[Au[x], {x, First[audata][[1]], Last[audata][[1]]}]
```

Out[8]=  $2.919295355 \times 10^6$

**Ni:****Ni-58**

```
In[9]:= nidata = {{6399600.0, 0.0}, {9000000.0, 1.2623 * 10-4},
  {1.0 * 107, 6.64294 * 10-4}, {1.1 * 107, 0.00269351}, {1.2 * 107, 0.00484589},
  {1.25 * 107, 0.00645438}, {1.3 * 107, 0.00866222}, {1.35 * 107, 0.0117925},
  {1.4 * 107, 0.0163228}, {1.45 * 107, 0.0230185}, {1.5 * 107, 0.0330738},
  {1.55 * 107, 0.0481386}, {1.6 * 107, 0.0696837}, {1.65 * 107, 0.0970024},
  {1.7 * 107, 0.12568}, {1.75 * 107, 0.14843}, {1.8 * 107, 0.155161},
  {1.85 * 107, 0.14228}, {1.9 * 107, 0.119319}, {1.95 * 107, 0.0966601},
  {2.0 * 107, 0.0783675}};
```

```
In[10]:= Ni = Interpolation[nidata];
Plot[Ni[x], {x, First[nidata][[1]], Last[nidata][[1]]}]
```



```
In[12]:= Integrate[Ni[x], {x, First[nidata][[1]], Last[nidata][[1]]}]
```

Out[12]= 578466.9687